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ACIDIC PRECIPITATION IN ONTARIO STUDY - APIOS

CUMULATIVE (28 DAY) PRECIPITATION CHEMISTRY LISTINGS JANUARY 5, 1982 - JANUARY 4, 1983

MARCH 1984

ARB-74-84-ARSP
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Ontario

Ministry of the Environment

The Honourable
Andrew S. Brandt
Minister

Brock A. Smith
Deputy Minister

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Special Studies Unit
Atmospheric Research and Special Programs Section
Air Resources Branch
Toronto, Ontario
Canada, M5S 1Z8

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This report was prepared by Richard Kirk and Walter Chan of the APIOS Atmospheric Deposition and Chemistry Program. However, the data themselves are a product of the combined efforts of many individuals. Precipitation samples were collected by a large number of site operators, whose names cannot be individually mentioned here, under the coordination of the APIOS environmental technicians Steve Elliott (in Southwestern Region), David Allcock and Paul Kehoe (in Southeastern Reigon), Wim Smits (in Northwestern Region), J.P. Varto (in Central Region) and Bill Bardswick and Chris Hutt (in Northeastern Region). Sample handling was carried out by Dan Orr and Liane Skelton, and overall network coordination by Bill Bardswick of the Air Resources Branch. Chemical Analyses were performed at the Laboratory Services Branch under the coordination of Frank Tomassini and Barry Loescher. All enquiries regarding the reported data should be directed to Walter Chan, the APIOS Atmospheric Deposition and Chemistry Program Leader (416) 965-1634.

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PART VII NORTHWESTERN REGION CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

PART I

INTRODUCTION

INTRODUCTION

The data listed herein are a summary of the results acquired from the APIOS cumulative precipitation sampling network from January 5, 1982 to January 4, 1983. The sampler utilized for colleciton of wet cumulative deposition is the M.I.C. Type "A" collector (Sangamo). During May to October when precipitation is mainly in the form of rain, the Sangamo collector is equipped with a 34 cm x 61 cm polyethylene bag insert. For snow and snow/rain collection from November to April, deeper collection vessels are utilized (122 cm) with 34 cm x 122 cm polyethylene bag inserts. The deeper collection vessel is utilized to reduce snow blow out. The period of accumulation per sample is 28 days.

All data presented in this report have been screened for validity. Remarks and qualifications have been appended to records, and/or results where necessary. The screening procedure involved checking each record for chemical analysis integrity (e.g. ionic balance, observed vs. theoretical conductance). Gross limits checks were applied to the results. Upper limits were determined as M + 2S where median (M) and scale (S) represent robust estimates of mean and standard deviation respectively. Scale of the distribuiton was estimated from interquartile distance , i.e. S=0.74 (3rd Quartile - 1st Quartile) based upon logarithmicly transformed results. In a situation where the distribuiton is significantly bounded by reported detection limits, S may be estimated as follows, S=1.48 (3rd Quartile - 2nd Quartile). All lower gross limits were specified as zero. The data were also screened for outliers statistically by applying the Dixon Ratio test to the highest and lowest values observed in each region on a monthly basis. Outliers were determined at the 95% level of confidence. Records and/or results deemed unreliable are flagged but not deleted. Sampler collection efficiency is deemed abnormal if found to be less than 50% or greater than 120%. If collection efficiency is found to be less than 50% then the reported sample volume is flagged as unreliable. Also, if it is reported that the sampled has spilled then the calculated efficiency is not reported in the data listings.

Station Identification

The station identification is defined by four descriptive fields (e.g., Dorest/Cumulative/Wet #20). The first field refers to the sampling location. The second and third fields describe the sampling interval and the sampling type (e.g., wet or dry) respectively. The last numeric field refers to the index code utilized on the location map. All precipitation chemistry listings are given in alphabetic order by station name within each region.

Cumulative Precipitation Chemistry Listings

Sample type, as coded in the data listings, represents the state of the collected sample at time of removal. The sample date represents the date on which the sample was removed from the sampler. All chemical analyses were done on unfiltered samples. Lab pH entries represent pH measurements obtained at the MOE Laboratory in Toronto. Reported total hydrogen ion concentraiton (mg l^{-1}) represents a titration of the sample with NaOH to an end point pH of 8.3. For a complete outline of lab analytical methodology please consult the Ontario Ministry of the Environment report "Outlines of Analytical Methods" coordinated by Water Quality Section, Laboratory Services Branch, June 1981.

Of the reported metals, aluminum, copper, iron and zinc were found to display significant adsorptive losses. As a result, a leach solution of 5% HNO_3 (1 litre) is placed in the emptied collection bag for 24 hours. The leach solution is then analysed for the above metals and a final metal concentration is then calculated. In the calculation of final metal concentration, if a detection limit is encountered, a value corresponding to one half the detection limit is utilized.

Co-located with each sampler is a cumulative precipitation gauge which serves as a primary standard of precipitation during the collection period. However, if the cumulative gauge depth is missing or is thought to be inaccurate, then an approximate precipitation depth is determined. The approximation is made by accumulating three surrounding CLIMAT* station daily depth gauge results individually and then interpolating linearly to the APIOS station. Sometimes precipitation gauge results could not be calculated by the above method, in which case the data are missing in the tables to follow.

Calculation of Equivalent Precipitation Depth (mm)

$$\text{Equivalent Precipitation Depth (mm)} = \frac{\text{Volume Collected (ml)} \times 30.8}{1000}$$

Calculation of Observed Sampling Efficiency

$$\% \text{ Efficiency} = \frac{\text{Equivalent Precipitation Depth (mm)} \times 100\ \%}{\text{Gauge Depth (mm)}}$$

Field Comment Code Index

A - Insects in sample
B - Leaves in sample
C - Particulates in sample
D - Fibres in sample
E - Sample not submitted
F - Sampler malfunctioned
G - Sample spilled or leaked
H - Volume incorrect
I - Event(s) missed
J - Wet side open when not precipitating
K - No precipitation collected
L - Part of event missed
Q - Other

* Environment Canada, Atmospheric Environment Service Meteorological Observations in Eastern Canada, Monthly Record

Office Comment Code Index

C - calculated/observed conductance discrepancy
H - calculated/observed pH discrepancy
J - Δ pH large
M - poor ionic balance
N - abnormal sampler efficiency
T - free hydrogen exceeds total hydrogen
X - sample lost

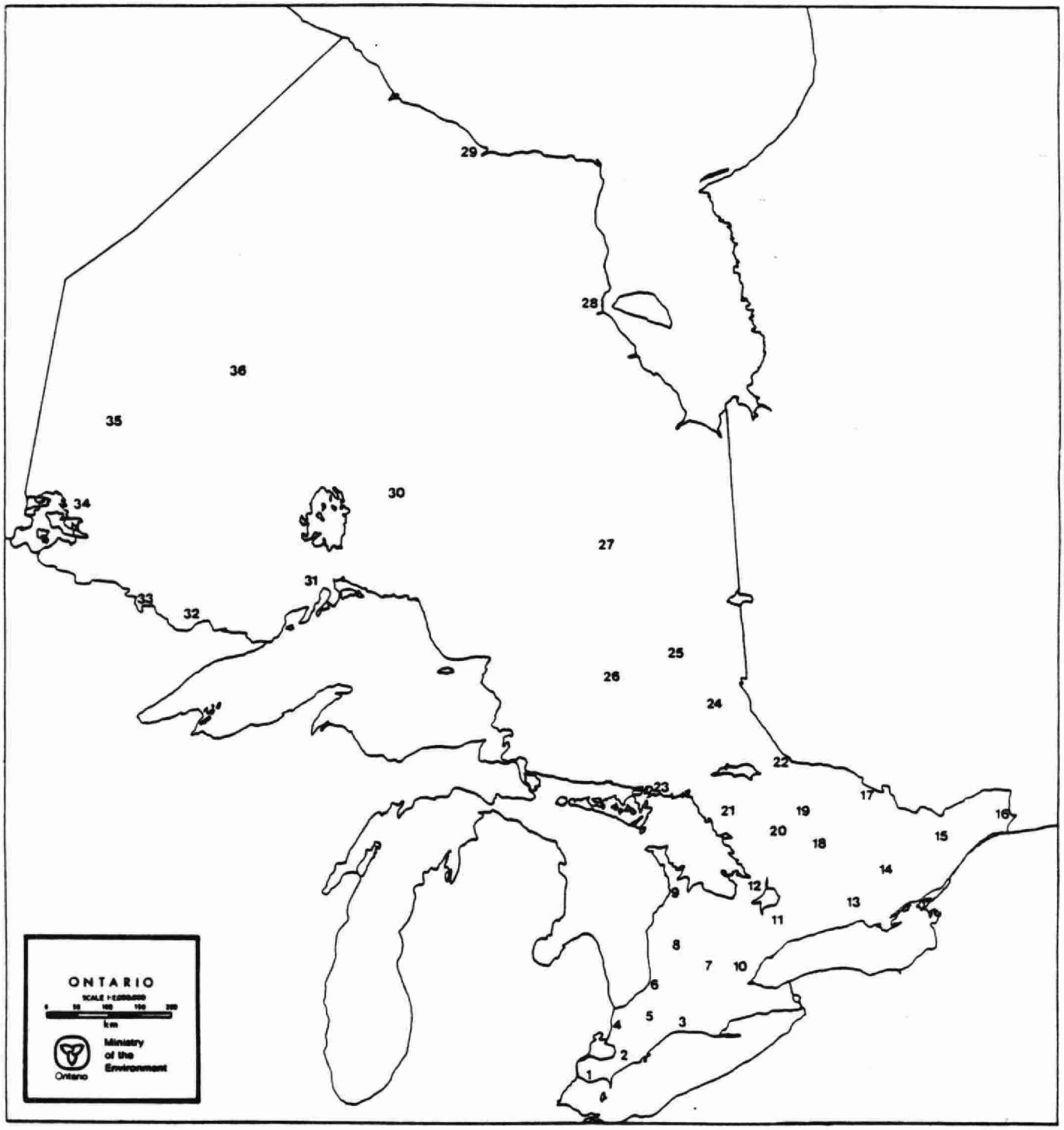
Analytical Result Remark Code Index

> - actual result greater than value reported
< - actual result less than value reported
< T - actual result less than criterion of detection
< W - no response, minimum possible result reported
A - approximate value
U - unreliable result
L - bag leach result not available
L< - bag leach result not available and precipitation sample result has been reported as a detection limit

PART II

STATION DESCRIPTION AND LOCATION MAP

STATION LOCATION MAP



1 - COLCHESTER
2 - MERLIN
3 - PORT STANLEY
4 - WILKESPORT
5 - ALVINSTON
6 - HURON PARK
7 - WATERLOO
8 - PALMERSTON
9 - SHALLOW LAKE
10 - MILTON
11 - UXBRIDGE
12 - COLDWATER
13 - CAMPBELLFORD
14 - KALADAR
15 - SMITH'S FALLS
16 - DALHOUSIE MILLS
17 - GOLDEN LAKE
18 - WILBERFORCE
19 - WHITNEY
20 - DORSET
21 - MCKELLAR
22 - MATTAWA
23 - KILLARNEY
24 - BEAR ISLAND
25 - GOWGANDA
26 - RAMSEY
27 - MOONBEAM
28 - ATTAWAPISKAT
29 - WINISK
30 - NAKINA
31 - DORION
32 - QUETICO CENTRE
33 - LAC LA CROIX
34 - EXP. LAKES AREA
35 - EAR FALLS
36 - PICKLE LAKE

APIOS CUMULATIVE WET DEPOSITION NETWORK SITE DESCRIPTIONS

MOE REGION	STATION NAME	ELEVATION (m above MSL)	LATITUDE (North)	LONGITUDE (West)	UTM GRID CO-ORDINATES (Northing)	(Easting)
Southwestern	Colchester	183	41°59'15"	82°55'41"	4650000	340300
	Merlin	191	42°14'47"	82°13'30"	4676400	398950
	Pt. Stanley	213	42°40'22"	81°09'55"	4724050	486700
	Wilkesport	183	42°42'11"	82°21'13"	4728350	389150
	Alvinston	221	42°49'36"	81°50'04"	4942000	431550
	Shallow Lake	229	44°34'54"	81°05'24"	4936200	492850
	Palmerston	389	43°48'19"	80°54'12"	4850050	507750
	Huron Park	250	43°17'28"	81°30'03"	4793000	459350
	Waterloo	343	43°28'39"	80°35'09"	4813750	533500
Central	Dorset	320	45°13'26"	78°55'52"	5009650	662400
	Milton	221	43°31'05"	79°55'54"	4818600	586350
	Uxbridge	244	44°12'46"	79°12'38"	4896800	643000
	Wilberforce	396	45°00'54"	78°12'58"	4988150	719400
	Campbellford	175	44°17'28"	77°47'33"	4907600	277150
	Coldwater	280	44°37'31"	79°32'08"	4942200	615900
Southeastern	Kaladar	244	44°41'31"	77°09'18"	4950800	329250
	Smith's Falls	122	44°56'41"	75°57'48"	4977100	423950
	Dalhousie Mills	69	45°19'00"	74°28'13"	5018100	541550
	Golden Lake	160	45°36'48"	77°12'03"	5053200	328400
Northeastern	McKellar	244	45°30'57"	79°55'19"	5040600	583950
	Killarney	183	45°59'26"	81°29'18"	5092900	462200
	Mattawa	198	46°16'45"	78°49'19"	5127150	667800
	Bear Island	305	46°58'22"	80°04'40"	5202400	570350
	Ramsey	427	47°26'33"	82°20'14"	5254900	399200
	Gowganda	343	47°39'04"	80°46'32"	5277300	516600
	Moonbeam	244	49°19'16"	82°08'46"	5463600	416650
	Attawapiskat	9	52°56'00"	82°24'00"	NA	NA
	Whitney	412	45°32'21"	78°15'35"	5045950	713950
Northwestern	Dorion	244	48°50'33"	88°36'45"	5410800	382150
	Nakina	320	50°10'38"	86°42'40"	5558150	520950
	Ear Falls	350	50°38'31"	93°13'13"	5609800	484150
	Pickle Lake	360	51°27'41"	90°12'04"	5704800	694550
	Lac la Croix	368	48°21'14"	92°12'32"	5355900	558400
	Quetico Centre	420	48°44'24"	91°12'08"	5399750	632100
	E.L.A.	123	49°39'22"	93°43'28"	5500950	447350
	Winisk	9	55°12'00"	85°08'00"	NA	NA

PART III

SOUTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP. #05 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	826	830	3	53.0	0	19154	2	1	76	C	H
MAR 2,82	FEB 2,82	830	1110	3	26.0	0	19175	2	1	7		N
MAR 30,82	MAR 2,82	1110	830	3	53.0	0	19195	2	1	77	C	
APR 27,82	MAR 30,82	830	830	1	72.0	0	19215	2	1	81	ACD	H
MAY 25,82	APR 27,82	830	830	1	14.0	0	19236	2	1	55	ABCD	
JUN 24,82	MAY 25,82	830	1045	1	111.0	0	19256	2	1	79	CD	
JUL 20,82	JUN 24,82	1045	830	1	34.0	0	19276	2	1	61	CDQ	
AUG 17,82	JUL 20,82	830	830	1	70.0	0	19296	2	1	87	DQ	
SEP 14,82	AUG 17,82	830	1030	1	59.0	0	19316	2	1	82	ACD	
OCT 12,82	SEP 14,82	1030	830	1	81.9	9	19336	2	1	85	CD	
NOV 9,82	OCT 12,82	830	830	1	60.0	0	19356	2	1	50	ACD	
DEC 7,82	NOV 9,82	830	830	3	124.0	0	19376	2	1	89	CD	
JAN 4,83	DEC 7,82	830	830	4	91.0	0	19396	2	1	69	CD	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP. #05

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	1317.0	18.4	6.20	0.0416	2.70	0.63	1.84
MAR 2,82	FEB 2,82	U 62.0	50.5	U 6.62	******	8.75	1.70	*****
MAR 30,82	MAR 2,82	1329.0	30.7	4.58	0.0560	5.00	0.81	1.53
APR 27,82	MAR 30,82	1896.0	20.6	5.65	0.0336	4.10	0.63	1.49
MAY 25,82	APR 27,82	252.0	118.0	3.90	0.1986	17.70	U 2.90	U 4.95
JUN 24,82	MAY 25,82	2875.0	36.4	4.08	0.0926	3.80	0.50	0.28
JUL 20,82	JUN 24,82	682.0	66.0	U 4.29	U 0.0824	U 13.50	U 1.74	U 4.35
AUG 17,82	JUL 20,82	1997.0	41.2	4.04	0.1062	5.40	0.53	0.43
SEP 14,82	AUG 17,82	1572.0	31.0	4.17	0.0854	3.35	0.45	0.25
OCT 12,82	SEP 14,82	2262.0	36.0	4.09	0.0984	3.75	0.57	0.26
NOV 9,82	OCT 12,82	984.0	23.5	4.40	0.0636	2.80	0.43	0.42
DEC 7,82	NOV 9,82	3590.0	25.0	4.30	0.0676	2.40	0.36	0.25
JAN 4,83	DEC 7,82	2047.0	19.5	4.46	0.0680	1.65	0.31	0.11

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP. #05

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.55	0.48	0.350	0.085	0.310	0.158	0.098
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.34	0.64	0.250	0.035	0.245	0.530	0.008
APR 27,82	MAR 30,82	0.30	0.77	0.275	0.055	0.145	0.610	0.029
MAY 25,82	APR 27,82	0.93	1.97	J 0.970	0.300	0.215	1.670	0.120
JUN 24,82	MAY 25,82	0.08	0.46	0.060	0.045	0.025	0.390	0.006
JUL 20,82	JUN 24,82	0.42	1.58	J 0.645	0.195	0.045	1.140	0.044
AUG 17,82	JUL 20,82	0.20	0.78	0.105	0.630	0.045	0.550	0.030
SEP 14,82	AUG 17,82	0.01	0.47	0.050	0.050	0.050	0.490	< 0.003
OCT 12,82	SEP 14,82	0.04	0.47	0.045	0.010	0.025	0.480	0.013
NOV 9,82	OCT 12,82	0.31	0.70	0.075	0.150	0.155	0.370	0.043
DEC 7,82	NOV 9,82	0.24	0.35	0.040	0.100	0.130	0.246	0.009
JAN 4,83	DEC 7,82	0.21	0.32	0.030	0.015	0.095	0.166	0.008

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP. #05 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE	NICKEL	ZINC	IRON	LEAD	VANADIUM	ALUMINUM
		MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
FEB 2,82	JAN 5,82	0.015	< 0.001	0.015	0.257	0.004	< 0.002	0.304
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.015	< 0.001	0.012	0.113	0.007	< 0.002	0.073
APR 27,82	MAR 30,82	0.013	< 0.001	0.003	0.119	0.004	< 0.002	0.118
MAY 25,82	APR 27,82	*****	*****	*****	*****	*****	*****	*****
JUN 24,82	MAY 25,82	0.003	< 0.001	0.008	0.025	0.004	< 0.002	0.017
JUL 20,82	JUN 24,82	U 0.118	< 0.001	0.021	U 1.320	< 0.001	< 0.002	U 0.292
AUG 17,82	JUL 20,82	0.004	< 0.001	L 0.007	L 0.010	0.003	< 0.002	L 0.015
SEP 14,82	AUG 17,82	0.002	< 0.001	L 0.009	L 0.008	0.006	< 0.002	L 0.007
OCT 12,82	SEP 14,82	0.002	< 0.001	0.007	0.051	0.009	< 0.002	0.039
NOV 9,82	OCT 12,82	0.003	< 0.001	0.017	0.120	0.007	< 0.002	0.071
DEC 7,82	NOV 9,82	0.002	< 0.001	0.009	0.011	0.003	< 0.002	0.006
JAN 4,83	DEC 7,82	0.001	< 0.001	0.019	0.019	0.003	< 0.002	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ALVINSTON/CUMULATIVE PRECIP. #05

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.058	0.0001	0.0006
MAR 2,82	FEB 2,82	*****	******	U 0.0002
MAR 30,82	MAR 2,82	0.004	0.0001	0.0263
APR 27,82	MAR 30,82	0.002	0.0001	0.0022
MAY 25,82	APR 27,82	*****	******	0.1259
JUN 24,82	MAY 25,82	< 0.001	< 0.0001	0.0832
JUL 20,82	JUN 24,82	0.003	U 0.0020	U 0.0513
AUG 17,82	JUL 20,82	L< 0.001	0.0001	0.0912
SEP 14,82	AUG 17,82	L< 0.001	< 0.0001	0.0676
OCT 12,82	SEP 14,82	0.001	0.0001	0.0813
NOV 9,82	OCT 12,82	0.003	0.0001	0.0398
DEC 7,82	NOV 9,82	0.002	0.0001	0.0501
JAN 4,83	DEC 7,82	< 0.001	0.0001	0.0347

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP. #01 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	820	750	2	68.0	0	19146	2	1	76	C	H
MAR 2,82	FEB 2,82	810	810	3	22.0	0	19167	2	1	68		
MAR 30,82	MAR 2,82	840	755	3	54.0	0	19187	2	1	49	ACD	N
APR 27,82	MAR 30,82	805	740	1	53.0	0	19207	2	1	69	ACD	
MAY 25,82	APR 27,82	740	830	1	16.0	0	19228	2	1	86	CD	
JUN 22,82	MAY 25,82	830	815	1	70.0	0	19248	2	1	67	AC	
JUL 20,82	JUN 22,82	815	820	1	39.3	9	19268	2	1	42	AC	N
AUG 17,82	JUL 20,82	820	800	1	51.0	0	19288	2	1	61	AFJC	
SEP 14,82	AUG 17,82	800	810	1	49.0	0	19308	2	1	46	CD	N
OCT 12,82	SEP 14,82	810	730	1	67.0	0	19328	2	1	83	CD	
NOV 9,82	OCT 12,82	730	800	1	105.0	0	19348	2	1	83		
DEC 7,82	NOV 9,82	800	820	1	106.0	0	19368	2	1	67	AHICMD	
JAN 4,83	DEC 7,82	820	800	4	81.0	0	19388	2	1	***	GE	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP. #01 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB		TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82		1697.0	25.4	4.57		0.0756	3.15	0.61		1.22
MAR 2,82	FEB 2,82		492.0	61.0	3.89		0.1722	4.65	1.12		0.49
MAR 30,82	MAR 2,82	U	868.0	43.2	4.12		0.1212	5.05	0.58		0.50
APR 27,82	MAR 30,82		1193.0	28.2	U 6.73		0.0342	5.60	0.62		1.87
MAY 25,82	APR 27,82		450.0	74.0	4.13		0.1422	11.80	1.70		2.43
JUN 22,82	MAY 25,82		1523.0	46.8	4.06		0.1080	5.70	0.68		0.47
JUL 20,82	JUN 22,82	U	543.0	70.0	3.82		0.1806	8.05	0.92		0.73
AUG 17,82	JUL 20,82		1012.0	78.5	3.81	U	0.3680	12.80	1.05		1.19
SEP 14,82	AUG 17,82	U	732.0	67.5	3.88		0.1574	10.45	0.78	U	1.36
OCT 12,82	SEP 14,82		1815.0	44.0	4.02		0.1160	5.15	0.65		0.42
NOV 9,82	OCT 12,82		2841.0	26.0	4.28		0.0684	3.40	0.32		0.47
DEC 7,82	NOV 9,82		2310.0	25.5	4.32		0.0728	2.30	0.36		0.23
JAN 4,83	DEC 7,82		******	*****	*****		******	*****	*****		*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP. #01 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	1.34	0.48	0.350	0.115	0.855	0.130	0.063
MAR 2,82	FEB 2,82	0.60	0.67	0.105	0.200	0.245	0.470	0.008
MAR 30,82	MAR 2,82	0.34	0.96	0.120	0.045	0.135	0.610	0.025
APR 27,82	MAR 30,82	0.48	1.65	0.550	0.105	0.235	1.010	0.103
MAY 25,82	APR 27,82	0.58	2.22	0.665	0.160	0.120	1.590	0.088
JUN 22,82	MAY 25,82	0.24	1.12	0.125	0.090	0.050	0.820	0.042
JUL 20,82	JUN 22,82	0.28	0.82	0.220	0.060	0.080	0.580	0.017
AUG 17,82	JUL 20,82	0.39	2.20	0.365	0.200	0.085	2.020	0.123
SEP 14,82	AUG 17,82	0.26	1.56	J 0.355	0.050	0.030	1.160	0.024
OCT 12,82	SEP 14,82	0.10	0.73	0.105	0.025	0.045	0.650	0.019
NOV 9,82	OCT 12,82	0.23	0.38	0.165	0.015	0.075	0.286	< 0.002
DEC 7,82	NOV 9,82	0.29	0.37	0.050	0.050	0.130	0.252	0.011
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP. #01 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.017	< 0.001	0.013	0.155	0.003	< 0.002	0.183
MAR 2,82	FEB 2,82	0.006	< 0.001	0.005	0.046	0.016	< 0.002	0.049
MAR 30,82	MAR 2,82	0.004	< 0.001	0.031	0.108	0.012	< 0.002	0.078
APR 27,82	MAR 30,82	0.011	< 0.001	0.004	0.131	0.001	< 0.002	0.120
MAY 25,82	APR 27,82	0.023	0.001	0.028	0.201	0.014	< 0.002	0.157
JUN 22,82	MAY 25,82	0.006	< 0.001	0.009	0.050	0.007	< 0.002	0.025
JUL 20,82	JUN 22,82	0.005	< 0.001	0.014	0.061	0.015	< 0.002	0.035
AUG 17,82	JUL 20,82	0.008	< 0.001	0.016	0.088	0.012	< 0.002	0.058
SEP 14,82	AUG 17,82	0.008	< 0.001	0.016	0.111	0.015	< 0.002	0.095
OCT 12,82	SEP 14,82	0.003	< 0.001	0.011	0.041	0.021	< 0.002	0.031
NOV 9,82	OCT 12,82	0.002	< 0.001	0.005	0.019	0.005	< 0.002	0.019
DEC 7,82	NOV 9,82	0.002	< 0.001	0.005	0.017	0.007	< 0.002	0.015
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLCHESTER/CUMULATIVE PRECIP. #01

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ UG/L
FEB 2,82	JAN 5,82	0.029	0.0001	0.0269
MAR 2,82	FEB 2,82	0.004	0.0003	0.1288
MAR 30,82	MAR 2,82	0.003	0.0002	0.0759
APR 27,82	MAR 30,82	0.002	0.0001	U 0.0002
MAY 25,82	APR 27,82	0.006	0.0002	0.0741
JUN 22,82	MAY 25,82	0.003	0.0007	0.0871
JUL 20,82	JUN 22,82	0.004	< 0.0001	0.1514
AUG 17,82	JUL 20,82	0.002	0.0004	0.1549
SEP 14,82	AUG 17,82	0.002	0.0002	0.1318
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.0955
NOV 9,82	OCT 12,82	0.001	< 0.0001	0.0525
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0479
JAN 4,83	DEC 7,82	*****	******	******

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP. #06 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
MAR 2,82	FEB 2,82	930	830	3	61.4	9	19185	2	1	22	IJC	N
MAR 31,82	MAR 2,82	830	930	3	48.3	1	19204	2	1	86		
APR 27,82	MAR 31,82	930	900	1	31.8	1	19225	2	1	25	FACD	N
MAY 25,82	APR 27,82	900	900	1	44.4	1	19246	2	1	41	ACD	N
JUN 22,82	MAY 25,82	900	930	1	131.8	1	19266	2	1	69	ADC	
JUL 20,82	JUN 22,82	930	1100	1	49.7	1	19286	2	1	58	CD	
AUG 18,82	JUL 20,82	1100	900	1	79.1	1	19306	2	1	83	CD	
SEP 14,82	AUG 18,82	900	900	1	76.1	1	19326	2	1	65	CD	
OCT 13,82	SEP 14,82	900	900	1	96.5	1	19346	2	1	74		
NOV 9,82	OCT 13,82	900	1000	1	70.3	1	19366	2	1	64	AC	
DEC 7,82	NOV 9,82	1000	900	3	115.0	2	19386	2	1	86	CD	
JAN 4,83	DEC 7,82	900	900	4	80.0	0	19406	2	1	79		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP. #06

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 UG/L	SULPHATE UG/L		NITRATE AS N MG/L		CALCIUM MG/L
MAR 2,82	FEB 2,82	U	452.0	56.5		4.02		0.1480	4.95		1.41		1.02
MAR 31,82	MAR 2,82		1358.0	28.3		4.59		0.0546	4.00		0.59		1.09
APR 27,82	MAR 31,82	U	263.0	34.3		5.14		0.0550	6.35		1.06		1.57
MAY 25,82	APR 27,82	U	600.0	56.5	U	6.75	U	0.0328	11.70	U	1.66	U	5.57
JUN 22,82	MAY 25,82		2978.0	43.3		4.16		0.0936	5.10		0.83		0.64
JUL 20,82	JUN 22,82		940.0	79.0		3.83		0.1652	10.00		1.15		1.98
AUG 18,82	JUL 20,82		2149.0	30.4		4.15		0.0814	3.90		0.46		0.51
SEP 14,82	AUG 18,82		1607.0	29.0		4.29		0.0742	4.60		0.56		0.65
OCT 13,82	SEP 14,82		2322.0	34.0		4.17		0.0920	4.05		0.61		0.49
NOV 9,82	OCT 13,82		1464.0	19.0	U	6.54	U	0.0258	3.80		0.44	U	1.79
DEC 7,82	NOV 9,82		3240.0	22.9		4.37		0.0642	2.60		0.38		0.42
JAN 4,83	DEC 7,82		2071.0	11.9		4.80		0.0388	1.55		0.27		0.41

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP. #06 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
MAR 2,82	FEB 2,82	0.52	0.88	0.160	0.145	0.400	0.730	0.012
MAR 31,82	MAR 2,82	0.85	0.57	0.160	U 0.885	0.245	0.480	U 0.200
APR 27,82	MAR 31,82	0.35	2.33	0.295	0.060	0.110	1.490	0.143
MAY 25,82	APR 27,82	0.41	1.68	U 0.935	0.130	0.115	1.210	0.040
JUN 22,82	MAY 25,82	0.12	1.03	0.120	0.045	0.025	0.860	0.017
JUL 20,82	JUN 22,82	0.30	1.52	0.310	0.090	0.055	1.280	0.013
AUG 18,82	JUL 20,82	0.11	0.56	0.070	0.030	0.030	0.470	0.008
SEP 14,82	AUG 18,82	0.15	0.84	0.115	0.025	0.015	0.760	0.012
OCT 13,82	SEP 14,82	0.04	0.73	0.065	0.010	0.020	0.590	0.010
NOV 9,82	OCT 13,82	0.22	0.60	0.320	0.155	0.215	0.480	0.009
DEC 7,82	NOV 9,82	0.20	0.38	0.065	0.025	0.075	0.330	0.015
JAN 4,83	DEC 7,82	0.21	0.23	0.085	0.020	0.100	0.172	0.007

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP. #06 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 31,82	MAR 2,82	0.008	< 0.001	0.013	0.094	0.010	< 0.002	0.096
APR 27,82	MAR 31,82	*****	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82	0.006	< 0.001	0.013	0.234	0.003	< 0.002	0.131
JUN 22,82	MAY 25,82	0.005	< 0.001	0.009	0.041	0.008	< 0.002	0.031
JUL 20,82	JUN 22,82	0.012	< 0.001	0.025	0.114	0.011	< 0.002	0.059
AUG 18,82	JUL 20,82	0.004	< 0.001	0.004	0.036	0.006	< 0.002	0.032
SEP 14,82	AUG 18,82	0.003	< 0.001	0.007	0.035	0.007	< 0.002	0.028
OCT 13,82	SEP 14,82	0.002	0.001	0.005	0.024	0.010	< 0.002	0.017
NOV 9,82	OCT 13,82	0.004	< 0.001	0.014	0.081	0.008	< 0.002	0.053
DEC 7,82	NOV 9,82	0.002	< 0.001	0.011	0.027	0.010	< 0.002	0.025
JAN 4,83	DEC 7,82	0.001	< 0.001	0.004	0.013	0.005	< 0.002	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : HURON PARK/CUMULATIVE PRECIP. #06

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
MAR 2,82	FEB 2,82	*****	******	0.0955
MAR 31,82	MAR 2,82	0.001	< 0.0001	0.0257
APR 27,82	MAR 31,82	*****	******	0.0072
MAY 25,82	APR 27,82	< 0.003	0.0001	U 0.0002
JUN 22,82	MAY 25,82	< 0.001	0.0001	0.0692
JUL 20,82	JUN 22,82	0.002	< 0.0001	0.1479
AUG 18,82	JUL 20,82	< 0.001	< 0.0001	0.0708
SEP 14,82	AUG 18,82	0.001	0.0001	0.0513
OCT 13,82	SEP 14,82	< 0.001	< 0.0001	0.0676
NOV 9,82	OCT 13,82	< 0.002	< 0.0001	U 0.0003
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0427
JAN 4,83	DEC 7,82	0.001	< 0.0001	0.0158

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP. #02 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	700	700	3	69.0	0	19148	2	1	37	C	NHCM
MAR 2,82	FEB 2,82	700	700	3	43.5	9	19169	2	1	23	F	N
MAR 30,82	MAR 2,82	700	700	3	49.0	0	19189	2	1	66	CD	
APR 27,82	MAR 30,82	700	700	1	56.4	9	19209	2	1	58	CD	
MAY 25,82	APR 27,82	700	700	1	12.4	9	19230	2	1	36		N
JUN 22,82	MAY 25,82	700	700	1	110.0	0	19250	2	1	83	ACD	
JUL 20,82	JUN 22,82	700	700	1	60.0	0	19270	2	1	83	CD	
AUG 17,82	JUL 20,82	700	700	1	35.0	0	19290	2	1	70	ADC	
SEP 14,82	AUG 17,82	700	1400	1	24.0	0	19310	2	1	16	CDI	N
OCT 12,82	SEP 14,82	1400	900	1	66.0	0	19330	2	1	88		
NOV 9,82	OCT 12,82	900	700	1	84.0	0	19350	2	1	21		N
DEC 7,82	NOV 9,82	700	700	3	117.0	0	19370	2	1	82	CD	
JAN 4,83	DEC 7,82	700	700	3	68.0	0	19390	2	1	35	CD	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP. #02

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L		NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82	U	837.0	45.0	U	7.05	0.0452	3.50		0.45	U	4.30
MAR 2,82	FEB 2,82	U	325.0	70.5		3.88	0.1964	5.00		1.44		0.62
MAR 30,82	MAR 2,82		1052.0	40.5		4.15	0.1018	4.20		0.67		0.56
APR 27,82	MAR 30,82		1075.0	20.2		5.16	0.0364	3.75		0.52		1.19
MAY 25,82	APR 27,82	U	147.0	93.8		3.89	0.2054	> 10.00		1.61		1.86
JUN 22,82	MAY 25,82		2983.0	29.3		4.39	0.0590	3.85		0.55		0.39
JUL 20,82	JUN 22,82		1630.0	82.5		3.69	0.2120	7.90		1.01		0.42
AUG 17,82	JUL 20,82		800.0	91.0		3.74	0.2020	12.75		1.17		1.56
SEP 14,82	AUG 17,82	U	128.0	68.0	U	5.05	0.0536	17.50	U	3.30		*****
OCT 12,82	SEP 14,82		1887.0	32.0		4.19	0.0894	3.90		0.54		0.37
NOV 9,82	OCT 12,82	U	597.0	15.5		4.72	0.0464	2.45		0.29		0.61
DEC 7,82	NOV 9,82		3145.0	25.0		4.35	0.0708	2.55		0.31		0.32
JAN 4,83	DEC 7,82	U	774.0	20.0		4.71	0.0494	2.80		0.47		0.82

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP. #02 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L		KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L		SODIUM MG/L	AMMONIUM AS N MG/L		PHOSPHOR MG/L
FEB 2,82	JAN 5,82	1.23	U	4.25	0.800	0.155		0.905	0.084	U	1.430
MAR 2,82	FEB 2,82	0.86		0.69	0.125	0.045		0.425	0.580		0.012
MAR 30,82	MAR 2,82	0.37		0.74	0.085	0.030		0.200	0.540		0.016
APR 27,82	MAR 30,82	0.36		0.85	0.225	0.050		0.155	0.480		0.105
MAY 25,82	APR 27,82	0.60		1.90	0.380	0.125		0.185	1.540		0.040
JUN 22,82	MAY 25,82	0.18		1.67	0.075	0.100	U	0.170	0.770	U	0.100
JUL 20,82	JUN 22,82	0.25		0.59	0.095	0.040		0.025	0.500	<	0.003
AUG 17,82	JUL 20,82	0.29		1.57	0.330	0.035		0.050	1.330		0.025
SEP 14,82	AUG 17,82	0.58		*****	*****	*****		*****	1.680		*****
OCT 12,82	SEP 14,82	0.04		0.78	0.065	0.030		0.040	0.600		0.025
NOV 9,82	OCT 12,82	0.20		0.46	0.165	< 0.005		0.080	0.208		0.024
DEC 7,82	NOV 9,82	0.19		0.24	0.060	0.025		0.100	0.204		0.012
JAN 4,83	DEC 7,82	0.38		0.52	0.225	0.040		0.185	0.254		0.006

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP. #02 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.005	< 0.001	0.018	0.078	0.012	< 0.002	0.098
APR 27,82	MAR 30,82	0.010	< 0.001	0.008	0.542	0.004	< 0.002	0.215
MAY 25,82	APR 27,82	*****	*****	*****	*****	*****	*****	*****
JUN 22,82	MAY 25,82	0.004	0.001	0.005	0.036	0.003	< 0.002	0.016
JUL 20,82	JUN 22,82	0.003	< 0.001	0.008	0.041	0.007	< 0.002	0.027
AUG 17,82	JUL 20,82	0.009	< 0.001	0.013	0.122	0.022	< 0.002	0.094
SEP 14,82	AUG 17,82	*****	*****	*****	*****	*****	*****	*****
OCT 12,82	SEP 14,82	0.003	< 0.001	0.006	0.037	0.010	< 0.002	0.024
NOV 9,82	OCT 12,82	0.005	< 0.001	0.008	U 0.314	U 0.016	< 0.002	U 0.203
DEC 7,82	NOV 9,82	0.002	< 0.001	0.005	0.026	0.006	< 0.002	0.024
JAN 4,83	DEC 7,82	0.004	< 0.001	0.007	0.101	0.008	< 0.002	0.078

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MERLIN/CUMULATIVE PRECIP. #02

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	U 0.0001
MAR 2,82	FEB 2,82	*****	******	0.1318
MAR 30,82	MAR 2,82	0.002	0.0002	0.0708
APR 27,82	MAR 30,82	0.004	0.0001	0.0069
MAY 25,82	APR 27,82	*****	******	0.1288
JUN 22,82	MAY 25,82	0.001	< 0.0001	0.0407
JUL 20,82	JUN 22,82	0.001	< 0.0001	0.2042
AUG 17,82	JUL 20,82	0.002	0.0002	0.1820
SEP 14,82	AUG 17,82	*****	******	U 0.0089
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.0646
NOV 9,82	OCT 12,82	0.002	< 0.0001	0.0191
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0447
JAN 4,83	DEC 7,82	< 0.002	0.0002	0.0195

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP. #08 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	1355	1400	3	51.0	0	19158	2	1	103	C	HCM
MAR 2,82	FEB 2,82	1400	1300	3	40.3	9	19179	2	1	38		N
MAR 30,82	MAR 2,82	1400	1300	3	67.7	9	19198	2	1	38	FC	N
APR 28,82	MAR 30,82	1300	1100	1	74.0	9	19219	2	1	63	C	
MAY 25,82	APR 28,82	1100	1300	1	22.8	9	19240	2	1	95	CD	
JUN 24,82	MAY 25,82	1300	1300	1	137.0	9	19260	2	1	87	CA	
JUL 20,82	JUN 24,82	1300	1300	1	50.0	0	19280	2	1	83	BCDFJ	
AUG 17,82	JUL 20,82	1300	1300	1	85.0	0	19300	2	1	69		
SEP 14,82	AUG 17,82	1300	1300	1	70.0	0	19320	2	1	84	AC	
OCT 12,82	SEP 14,82	1300	1300	1	90.0	0	19340	2	1	72		
NOV 9,82	OCT 12,82	1300	1300	1	70.0	0	19360	2	1	79	A	
DEC 7,82	NOV 9,82	1300	1300	3	124.0	0	19380	2	1	78	FHIMAC	H
JAN 4,83	DEC 7,82	1300	1300	3	52.0	0	19400	2	1	88	CD	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP. #08 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	1712.0	33.0	U 6.73	U 0.0422	U 2.90	0.65	U 2.40
MAR 2,82	FEB 2,82	U 501.0	33.6	4.36	******	4.45	0.80	1.02
MAR 30,82	MAR 2,82	U 850.0	44.7	4.16	0.1002	5.00	1.04	0.77
APR 28,82	MAR 30,82	1521.0	28.6	U 7.10	U 0.0236	4.15	0.69	U 2.26
MAY 25,82	APR 28,82	705.0	25.7	U 6.34	U 0.0368	4.85	0.82	U 1.29
JUN 24,82	MAY 25,82	3894.0	31.8	4.25	0.0772	3.45	0.48	0.22
JUL 20,82	JUN 24,82	1355.0	34.5	4.11	0.0890	4.40	0.45	0.28
AUG 17,82	JUL 20,82	1910.0	31.8	4.16	0.0822	3.85	0.46	0.31
SEP 14,82	AUG 17,82	1912.0	35.3	4.11	0.0990	4.00	0.55	0.32
OCT 12,82	SEP 14,82	2120.0	30.5	4.16	0.0874	3.00	0.44	0.11
NOV 9,82	OCT 12,82	1814.0	19.5	4.76	0.0474	3.35	0.42	0.41
DEC 7,82	NOV 9,82	3151.0	16.5	U 4.72	0.0466	2.50	0.36	0.25
JAN 4,83	DEC 7,82	1498.0	*****	*****	******	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP. #08 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.97	U 1.85	U 0.650	0.180	U 0.705	0.314	U 0.375
MAR 2,82	FEB 2,82	0.32	*****	0.340	0.025	0.260	0.630	*****
MAR 30,82	MAR 2,82	0.44	0.96	U 0.225	0.060	0.255	0.730	0.012
APR 28,82	MAR 30,82	0.38	0.86	U 0.835	0.030	0.155	0.740	0.023
MAY 25,82	APR 28,82	0.18	1.48	0.405	0.055	0.040	1.260	0.045
JUN 24,82	MAY 25,82	0.06	0.64	0.070	0.035	0.015	0.520	0.008
JUL 20,82	JUN 24,82	0.10	0.84	0.085	0.040	0.015	0.660	0.012
AUG 17,82	JUL 20,82	0.10	0.50	0.065	0.025	0.015	0.580	< 0.002
SEP 14,82	AUG 17,82	0.15	0.57	0.080	0.015	0.010	0.520	< 0.003
OCT 12,82	SEP 14,82	< 0.01	0.43	0.010	0.010	0.010	0.390	0.007
NOV 9,82	OCT 12,82	0.18	0.99	0.110	0.105	0.050	0.800	0.047
DEC 7,82	NOV 9,82	0.18	0.80	0.075	0.080	0.100	0.700	U 0.053
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP. #09 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.004	< 0.001	0.015	U 0.995	0.002	< 0.002	U 1.022
MAR 2,82	FEB 2,82	0.007	< 0.001	< 0.006	0.061	0.010	< 0.002	0.043
MAR 30,82	MAR 2,82	0.005	< 0.001	0.021	0.062	0.014	< 0.002	0.072
APR 28,82	MAR 30,82	0.006	< 0.001	0.006	0.095	< 0.001	< 0.002	0.076
MAY 25,82	APR 28,82	0.007	< 0.001	0.007	0.127	0.003	< 0.002	0.085
JUN 24,82	MAY 25,82	0.017	0.002	0.011	U 0.917	0.050	0.002	U 1.082
JUL 20,82	JUN 24,82	0.002	< 0.001	0.006	0.026	0.001	< 0.002	0.019
AUG 17,82	JUL 20,82	0.003	< 0.001	0.006	0.027	0.005	< 0.002	0.017
SEP 14,82	AUG 17,82	0.004	< 0.001	0.007	0.021	0.007	< 0.002	0.025
OCT 12,82	SEP 14,82	< 0.001	< 0.001	0.002	0.011	0.006	< 0.002	0.005
NOV 9,82	OCT 12,82	0.003	< 0.001	0.007	0.038	0.007	< 0.002	0.036
DEC 7,82	NOV 9,82	0.001	< 0.001	0.004	0.017	0.003	< 0.002	0.015
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PALMERSTON/CUMULATIVE PRECIP. #08

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.031	< 0.0001	U 0.0002
MAR 2,82	FEB 2,82	0.004	0.0002	0.0437
MAR 30,82	MAR 2,82	0.003	0.0003	0.0692
APR 28,82	MAR 30,82	0.002	0.0002	U 0.0001
MAY 25,82	APR 28,82	< 0.002	0.0001	U 0.0005
JUN 24,82	MAY 25,82	0.005	0.0004	0.0562
JUL 20,82	JUN 24,82	0.001	< 0.0001	0.0776
AUG 17,82	JUL 20,82	< 0.002	< 0.0001	0.0692
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0776
OCT 12,82	SEP 14,82	< 0.001	< 0.0001	0.0692
NOV 9,82	OCT 12,82	< 0.002	< 0.0001	0.0174
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	U 0.0191
JAN 4,83	DEC 7,82	*****	******	******

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP. #03 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	900	3	60.0	0	19150	2	1	57	CD	HM
MAR 2,82	FEB 2,82	900	900	3	17.0	0	19171	2	1	A	FIMO	N
MAR 30,82	MAR 2,82	900	900	3	67.0	0	19191	2	1	71	JCD	
APR 27,82	MAR 30,82	900	700	1	76.1	9	19211	2	1	59	CD	H
MAY 25,82	APR 27,82	700	1300	1	20.5	9	19232	2	1	46	D	NT
JUN 22,82	MAY 25,82	1300	630	1	172.0	0	19252	2	1	74	CD	
JUL 20,82	JUN 22,82	630	630	1	62.0	0	19272	2	1	88	BCD	T
AUG 17,82	JUL 20,82	900	900	1	78.0	0	19292	2	1	81		
SEP 14,82	AUG 17,82	900	900	1	27.0	0	19312	2	1	68	D	
OCT 12,82	SEP 14,82	900	930	1	85.0	0	19332	2	1	42	JNACD	N
NOV 9,82	OCT 12,82	930	900	1	93.0	0	19352	2	1	84	TF	
DEC 7,82	NOV 9,82	900	900	3	130.0	0	19372	2	1	85	CD	
JAN 4,83	DEC 7,82	900	1100	3	77.0	0	19392	2	1	86	CD	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP. #03 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82		1116.0	40.0	U	6.84	0.0540		4.60	0.73	U	4.60
MAR 2,82	FEB 2,82	U	47.0	*****		3.78	******		12.00	1.94		*****
MAR 30,82	MAR 2,82		1565.0	52.5		4.07	0.1284		5.00	0.79		0.48
APR 27,82	MAR 30,82		1458.0	36.5		4.68	0.0712		6.55	0.96		1.83
MAY 25,82	APR 27,82	U	311.0	65.0		4.02	0.0804		7.70	1.50		1.41
JUN 22,82	MAY 25,82		4157.0	42.1		4.03	0.1100		4.00	0.56		0.15
JUL 20,82	JUN 22,82		1788.0	86.5		3.63	0.2220		9.35	0.96		0.30
AUG 17,82	JUL 20,82		2065.0	47.7		3.93	0.2240		5.05	0.52		0.20
SEP 14,82	AUG 17,82		600.0	51.0		3.94	0.1382		6.50	0.68		0.46
OCT 12,82	SEP 14,82	U	1172.0	40.9		3.99	0.1136		4.25	0.62		0.37
NOV 9,82	OCT 12,82		2542.0	14.7		4.48	0.0498		1.45	0.22		0.17
DEC 7,82	NOV 9,82		3618.0	31.0		4.11	0.0898		2.70	0.40		0.21
JAN 4,83	DEC 7,82		2156.0	17.3	U	6.67	U 0.0268		3.00	0.48	U	1.92

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP. #03 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	1.11	U 1.25	0.700	0.275	0.645	0.142	0.370
MAR 2,82	FEB 2,82	0.94	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.27	0.70	0.065	0.035	0.125	0.580	0.011
APR 27,82	MAR 30,82	0.40	1.18	0.355	0.050	0.155	0.760	0.057
MAY 25,82	APR 27,82	0.30	2.50	0.275	0.090	0.090	0.900	0.305
JUN 22,82	MAY 25,82	0.09	0.50	0.035	< 0.015	0.015	0.420	0.005
JUL 20,82	JUN 22,82	0.18	1.00	0.070	0.040	0.025	0.920	< 0.001
AUG 17,82	JUL 20,82	0.10	0.54	0.040	0.030	0.015	0.490	< 0.001
SEP 14,82	AUG 17,82	0.19	1.11	0.090	U 0.125	U 0.210	0.940	0.009
OCT 12,82	SEP 14,82	0.07	0.60	0.070	0.050	0.040	0.430	0.022
NOV 9,82	OCT 12,82	0.11	0.18	0.030	<W 0.005	0.045	0.148	< 0.003
DEC 7,82	NOV 9,82	0.22	0.28	0.035	0.030	0.115	0.218	0.020
JAN 4,83	DEC 7,82	0.30	0.31	J 0.380	0.030	0.130	0.218	0.008

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP. #03 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.007	< 0.001	0.011	0.944	< 0.001	< 0.002	0.793
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.006	< 0.001	0.016	0.063	0.012	< 0.002	0.105
APR 27,82	MAR 30,82	0.038	< 0.001	0.009	0.147	0.004	< 0.002	0.165
MAY 25,82	APR 27,82	*****	*****	*****	*****	*****	*****	*****
JUN 22,82	MAY 25,82	0.002	< 0.001	0.006	0.020	0.006	0.004	0.007
JUL 20,82	JUN 22,82	0.003	< 0.001	0.007	0.033	0.005	< 0.002	0.025
AUG 17,82	JUL 20,82	0.002	< 0.001	0.004	0.019	0.006	< 0.002	0.012
SEP 14,82	AUG 17,82	0.005	< 0.001	0.012	0.045	0.006	< 0.002	0.043
OCT 12,82	SEP 14,82	0.002	< 0.001	0.005	0.026	0.009	< 0.002	0.031
NOV 9,82	OCT 12,82	< 0.001	< 0.001	< 0.003	0.013	0.005	< 0.002	0.008
DEC 7,82	NOV 9,82	0.002	< 0.001	0.004	0.014	0.005	< 0.002	0.013
JAN 4,83	DEC 7,82	0.009	< 0.001	0.005	0.103	0.004	< 0.002	0.070

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PORT STANLEY/CUMULATIVE PRECIP. #03

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.030	0.0003	U 0.0001
MAR 2,82	FEB 2,82	*****	******	0.1660
MAR 30,82	MAR 2,82	0.002	0.0047	0.0851
APR 27,82	MAR 30,82	0.004	0.0005	0.0209
MAY 25,82	APR 27,82	*****	******	0.0955
JUN 22,82	MAY 25,82	0.001	0.0003	0.0933
JUL 20,82	JUN 22,82	0.001	< 0.0001	0.2344
AUG 17,82	JUL 20,82	< 0.001	< 0.0001	0.1175
SEP 14,82	AUG 17,82	< 0.003	0.0002	0.1148
OCT 12,82	SEP 14,82	0.001	0.0003	0.1023
NOV 9,82	OCT 12,82	0.001	< 0.0001	0.0331
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0776
JAN 4,83	DEC 7,82	< 0.001	0.0002	U 0.0002

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP. #09 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	830	1730	3	112.0	0	19156	2	1	26		N
MAR 2,82	FEB 2,82	1730	900	2	37.0	0	19177	2	1	17	FIC	N
MAR 30,82	MAR 2,82	900	830	3	75.0	0	19197	2	1	26	FAC	N
APR 27,82	MAR 30,82	830	830	1	74.0	0	19217	2	1	72	AC	
MAY 25,82	APR 27,82	830	800	1	30.0	0	19238	2	1	89	AC	
JUN 22,82	MAY 25,82	800	815	1	123.0	0	19258	2	1	***	CGD	NTHCM
JUL 21,82	JUN 24,82	1045	1515	1	50.0	0	19278	2	1	70	CD	T
AUG 17,82	JUL 21,82	1515	645	1	52.0	0	19298	2	1	85	CD	
SEP 14,82	AUG 17,82	645	830	1	101.2	9	19318	2	1	27	D	N
OCT 12,82	SEP 14,82	830	800	1	53.0	0	19338	2	1	68	C	
NOV 9,82	OCT 12,82	800	845	1	80.0	0	19358	2	1	84	ACD	
DEC 7,82	NOV 9,82	845	915	1	127.0	0	19378	2	1	66	FH	
JAN 4,83	DEC 7,82	915	830	4	69.0	0	19398	2	1	44	CDF	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP. #09 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U	958.0	15.0	4.56	0.0610	1.20	0.34	0.29
MAR 2,82	FEB 2,82	U	210.0	62.5	3.92	******	5.50	1.46	0.51
MAR 30,82	MAR 2,82	U	656.0	41.2	4.11	0.1060	3.40	0.56	0.21
APR 27,82	MAR 30,82		1730.0	27.0	4.61	0.0690	3.40	0.71	0.53
MAY 25,82	APR 27,82		867.0	37.2	4.43	0.0788	5.90	0.71	0.84
JUN 22,82	MAY 25,82	U	618.0	29.1	3.97	0.0822	2.90	0.37	0.12
JUL 21,82	JUN 24,82		1141.0	72.0	3.74	0.1818	7.25	0.94	0.34
AUG 17,82	JUL 21,82		1440.0	19.5	4.43	0.0558	2.05	0.43	0.30
SEP 14,82	AUG 17,82	U	912.0	25.9	4.21	0.0798	2.90	0.33	0.15
OCT 12,82	SEP 14,82		1181.0	37.0	4.10	0.0974	3.90	0.66	0.30
NOV 9,82	OCT 12,82		2193.0	20.0	4.52	0.0586	2.55	0.43	0.30
DEC 7,82	NOV 9,82		2726.0	28.0	4.33	0.0896	2.30	0.45	0.10
JAN 4,83	DEC 7,82	U	997.0	30.6	4.27	0.0858	3.15	0.61	0.39

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP. #09 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.37	0.22	0.100	0.050	0.195	0.132	0.017
MAR 2,82	FEB 2,82	0.28	*****	0.150	0.030	0.185	1.080	*****
MAR 30,82	MAR 2,82	0.16	0.63	0.035	0.010	0.045	0.470	0.006
APR 27,82	MAR 30,82	0.16	1.23	0.090	0.050	0.060	0.810	0.075
MAY 25,82	APR 27,82	0.18	1.08	0.200	0.050	0.070	0.940	0.015
JUN 22,82	MAY 25,82	0.02	0.54	0.040	0.035	< 0.010	0.380	0.010
JUL 21,82	JUN 24,82	0.19	0.92	0.085	0.050	0.015	0.720	< 0.003
AUG 17,82	JUL 21,82	0.08	0.54	0.070	0.135	0.015	0.430	0.006
SEP 14,82	AUG 17,82	0.01	0.39	0.025	0.020	0.005	0.366	0.008
OCT 12,82	SEP 14,82	0.04	0.63	0.060	0.010	0.020	0.580	0.007
NOV 9,82	OCT 12,82	0.15	0.84	0.055	0.105	0.045	0.490	0.057
DEC 7,82	NOV 9,82	0.30	0.48	0.025	0.090	0.140	0.322	0.005
JAN 4,83	DEC 7,82	0.40	0.63	0.095	U 0.100	0.250	0.490	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP. #09

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.003	< 0.001	0.010	0.069	0.005	< 0.002	0.070
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.002	< 0.001	0.017	0.025	0.007	< 0.002	0.058
APR 27,82	MAR 30,82	0.010	< 0.001	0.003	0.038	0.004	< 0.002	0.042
MAY 25,82	APR 27,82	0.008	< 0.001	0.007	0.147	0.005	< 0.002	0.046
JUN 22,82	MAY 25,82	0.002	< 0.001	0.006	0.056	0.001	< 0.002	0.023
JUL 21,82	JUN 24,82	0.003	< 0.001	0.007	0.038	0.005	< 0.002	0.030
AUG 17,82	JUL 21,82	0.002	< 0.001	0.005	0.018	0.003	< 0.002	0.011
SEP 14,82	AUG 17,82	0.002	< 0.001	0.005	0.054	0.006	< 0.002	0.047
OCT 12,82	SEP 14,82	0.002	< 0.001	0.009	0.037	0.009	< 0.002	0.017
NOV 9,82	OCT 12,82	0.002	< 0.001	0.004	0.019	< 0.001	< 0.002	0.019
DEC 7,82	NOV 9,82	0.001	< 0.001	0.004	0.009	0.004	< 0.002	0.011
JAN 4,83	DEC 7,82	0.004	< 0.001	0.012	0.075	0.006	< 0.002	0.081

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SHALLOW LAKE/CUMULATIVE PRECIP. #09

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.054	< 0.0001	0.0275
MAR 2,82	FEB 2,82	*****	******	0.1202
MAR 30,82	MAR 2,82	0.002	0.0001	0.0776
APR 27,82	MAR 30,82	0.002	0.0001	0.0245
MAY 25,82	APR 27,82	0.002	0.0002	0.0372
JUN 22,82	MAY 25,82	< 0.003	< 0.0001	0.1072
JUL 21,82	JUN 24,82	0.001	< 0.0001	0.1820
AUG 17,82	JUL 21,82	< 0.002	< 0.0001	0.0372
SEP 14,82	AUG 17,82	0.002	0.0001	0.0617
OCT 12,82	SEP 14,82	< 0.002	< 0.0001	0.0794
NOV 9,82	OCT 12,82	0.001	< 0.0001	0.0302
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0468
JAN 4,83	DEC 7,82	< 0.002	0.0002	0.0537

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP. #07 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	830	830	3	77.0	0	19160	2	1	***	EG	
MAR 2,82	FEB 2,82	830	845	3	22.0	0	19181	2	1	21		N
MAR 30,82	MAR 2,82	845	830	3	53.0	0	19200	2	1	58	CD	
MAY 7,82	MAR 30,82	830	1200	1	72.0	0	19221	2	1	89	C	
MAY 25,82	MAY 7,82	1200	820	1	23.0	0	19242	2	1	70	CD	
JUN 22,82	MAY 25,82	820	815	1	121.0	0	19262	2	1	82	AC	
JUL 20,82	JUN 22,82	815	815	1	75.0	0	19282	2	1	81	CD	
AUG 17,82	JUL 20,82	815	825	1	88.0	0	19302	2	1	74	FJ	
SEP 17,82	AUG 17,82	825	1030	1	95.0	0	19322	2	1	38	CD	N
OCT 12,82	SEP 17,82	1030	830	1	112.0	0	19342	2	1	53	ACD	
NOV 9,82	OCT 12,82	830	850	1	39.0	0	19362	2	1	61	FIC	
DEC 7,82	NOV 9,82	850	830	1	152.0	0	19382	2	1	***	EG	
JAN 4,83	DEC 7,82	830	820	3	80.0	0	19402	2	1	77	D	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP. #07 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		******	*****		*****	******	*****	*****	*****
MAR 2,82	FEB 2,82	U	152.0	46.2		4.06	******	3.75	0.87	0.49
MAR 30,82	MAR 2,82		1004.0	64.4		3.94	0.1586	5.50	1.17	0.54
MAY 7,82	MAR 30,82		2099.0	29.8		4.46	0.0708	4.60	0.70	0.83
MAY 25,82	MAY 7,82		530.0	55.0		4.15	0.1278	7.40	1.28	0.86
JUN 22,82	MAY 25,82		3245.0	24.5	U	6.55	0.0346	4.65	0.69	0.57
JUL 20,82	JUN 22,82		1978.0	34.5		4.09	0.0886	3.70	0.33	0.22
AUG 17,82	JUL 20,82		2115.0	43.0		4.00	0.1106	5.30	0.64	0.43
SEP 17,82	AUG 17,82	U	1176.0	19.6		4.49	0.0502	2.55	0.33	0.28
OCT 12,82	SEP 17,82		1940.0	38.9		4.12	0.1004	4.85	0.68	0.35
NOV 9,82	OCT 12,82		779.0	26.5		4.37	0.0666	3.45	0.51	0.52
DEC 7,82	NOV 9,82		******	*****		*****	******	*****	*****	*****
JAN 4,83	DEC 7,82		2011.0	11.3		4.83	0.0378	0.95	0.20	0.16

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP. #07 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	0.42	*****	0.115	0.040	0.280	0.510	*****
MAR 30,82	MAR 2,82	0.41	0.95	0.090	0.030	0.185	0.680	0.011
MAY 7,82	MAR 30,82	0.27	0.84	0.195	0.050	0.065	0.770	0.028
MAY 25,82	MAY 7,82	0.23	1.45	0.215	0.050	0.045	1.360	0.020
JUN 22,82	MAY 25,82	0.18	U 3.05	0.130	0.240	0.080	U 1.810	0.164
JUL 20,82	JUN 22,82	0.08	0.46	0.045	0.035	0.040	0.370	< 0.003
AUG 17,82	JUL 20,82	0.19	0.99	0.100	0.170	0.035	0.730	0.042
SEP 17,82	AUG 17,82	0.33	0.60	0.060	U 0.200	U 0.250	0.440	0.008
OCT 12,82	SEP 17,82	0.13	1.06	0.085	0.120	0.065	0.910	0.046
NOV 9,82	OCT 12,82	0.23	0.74	0.105	0.010	0.075	0.560	0.009
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.19	0.15	0.055	0.010	0.070	0.080	< 0.001

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP. #07 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.006	< 0.001	0.013	0.061	0.013	< 0.002	0.089
MAY 7,82	MAR 30,82	0.016	< 0.001	0.001	0.104	0.005	< 0.002	0.081
MAY 25,82	MAY 7,82	0.009	< 0.001	< 0.006	0.104	0.015	< 0.002	0.079
JUN 22,82	MAY 25,82	0.010	< 0.001	0.012	0.080	0.004	< 0.002	0.040
JUL 20,82	JUN 22,82	0.002	< 0.001	0.003	0.023	0.003	< 0.002	0.017
AUG 17,82	JUL 20,82	0.004	< 0.001	0.010	0.034	0.004	< 0.002	0.025
SEP 17,82	AUG 17,82	0.002	< 0.001	0.009	0.030	0.004	< 0.002	0.026
OCT 12,82	SEP 17,82	0.003	0.001	0.007	0.036	0.013	< 0.002	0.017
NOV 9,82	OCT 12,82	0.004	< 0.001	0.014	0.041	0.009	< 0.002	0.045
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.001	< 0.001	< 0.003	0.008	0.004	< 0.002	0.013

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WATERLOO/CUMULATIVE PRECIP. #07

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	******
MAR 2,82	FEB 2,82	*****	******	0.0871
MAR 30,82	MAR 2,82	0.003	0.0002	0.1148
MAY 7,82	MAR 30,82	0.001	0.0001	0.0347
MAY 25,82	MAY 7,82	0.003	0.0001	0.0708
JUN 22,82	MAY 25,82	< 0.001	0.0001	U 0.0003
JUL 20,82	JUN 22,82	0.002	< 0.0001	0.0813
AUG 17,82	JUL 20,82	< 0.001	0.0003	0.1000
SEP 17,82	AUG 17,82	0.001	< 0.0001	0.0324
OCT 12,82	SEP 17,82	0.001	0.0002	0.0759
NOV 9,82	OCT 12,82	0.002	0.0016	0.0427
DEC 7,82	NOV 9,82	*****	******	******
JAN 4,83	DEC 7,82	< 0.001	0.0001	0.0148

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP. #04 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 1,82	JAN 5,82	1300	1100	2	39.0	0	19152	2	1	61	C	H
MAR 2,82	FEB 1,82	1100	1210	3	17.0	0	19173	2	1	25		N
MAR 30,82	MAR 2,82	1210	1430	1	45.0	0	19193	2	1	55		
APR 27,82	MAR 30,82	1430	1000	1	37.0	0	19213	2	1	86	CD	
MAY 25,82	APR 27,82	1000	1200	1	15.0	0	19234	2	1	60	ACD	H
JUN 22,82	MAY 25,82	1200	900	1	110.0	0	19254	2	1	72	ACD	
JUL 20,82	JUN 22,82	900	1335	1	54.0	0	19274	2	1	74	ACD	
AUG 17,82	JUL 20,82	1335	1300	1	30.0	0	19294	2	1	44	CDQ	N
SEP 14,82	AUG 17,82	1300	1200	1	42.0	0	19314	2	1	69	CD	
OCT 12,82	SEP 14,82	1200	1500	1	74.0	0	19334	2	1	70	CD	
NOV 9,82	OCT 12,82	1500	1000	1	45.0	0	19354	2	1	81	CD	
DEC 8,82	NOV 9,82	1000	800	1	128.0	0	19374	2	1	71	C	
JAN 4,83	DEC 8,82	800	1500	4	63.0	0	19394	2	1	76		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP. #04 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,82	JAN 5,82	780.0	20.0	5.23	0.0510	2.80	0.70	1.50
MAR 2,82	FEB 1,82	U 143.0	79.5	3.92	******	8.00	1.66	1.13
MAR 30,82	MAR 2,82	818.0	44.0	4.24	0.0976	5.25	0.76	0.99
APR 27,82	MAR 30,82	1035.0	22.7	5.09	0.0472	4.15	0.52	1.09
MAY 25,82	APR 27,82	294.0	78.0	4.54	0.0880	16.40	U 2.54	U 6.26
JUN 22,82	MAY 25,82	2598.0	36.0	4.27	0.0724	5.05	0.58	0.84
JUL 20,82	JUN 22,82	1314.0	75.0	3.75	0.1804	8.80	0.96	0.51
AUG 17,82	JUL 20,82	U 429.0	76.0	4.11	0.1224	U 16.45	U 1.53	U 3.66
SEP 14,82	AUG 17,82	953.0	44.4	4.09	0.1078	6.15	0.72	0.70
OCT 12,82	SEP 14,82	1692.0	39.0	4.10	0.1054	4.40	0.56	0.30
NOV 9,82	OCT 12,82	1188.0	19.0	4.51	0.0532	2.70	0.27	0.61
DEC 8,82	NOV 9,82	2986.0	30.6	4.18	0.0850	2.90	0.40	0.28
JAN 4,83	DEC 8,82	1575.0	23.5	4.51	0.0792	2.90	0.42	0.50

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP. #04 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,82	JAN 5,82	0.76	0.58	0.195	0.180	0.510	0.246	0.158
MAR 2,82	FEB 1,82	1.10	*****	0.130	0.140	0.715	U 1.630	*****
MAR 30,82	MAR 2,82	0.45	0.94	0.105	0.025	0.185	0.770	0.012
APR 27,82	MAR 30,82	0.22	0.98	0.155	0.040	0.080	0.710	0.020
MAY 25,82	APR 27,82	0.74	1.98	J 0.815	0.245	0.235	1.350	0.085
JUN 22,82	MAY 25,82	0.12	0.88	0.105	0.075	0.030	0.650	0.026
JUL 20,82	JUN 22,82	0.23	1.41	0.100	0.115	0.030	1.110	0.053
AUG 17,82	JUL 20,82	0.62	U 2.75	J 0.485	0.370	0.115	2.040	0.122
SEP 14,82	AUG 17,82	0.31	1.17	0.105	0.040	0.025	1.000	0.015
OCT 12,82	SEP 14,82	0.09	0.73	0.050	0.070	0.090	0.640	0.006
NOV 9,82	OCT 12,82	0.18	0.29	0.085	0.010	0.050	0.216	0.008
DEC 8,82	NOV 9,82	0.26	0.34	0.040	0.025	0.135	0.276	0.011
JAN 4,83	DEC 8,82	0.45	0.66	0.075	0.035	0.200	0.490	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP. #04 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,82	JAN 5,82	0.009	< 0.001	0.013	0.149	0.005	< 0.002	0.115
MAR 2,82	FEB 1,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.006	< 0.001	0.016	0.055	0.010	< 0.002	0.082
APR 27,82	MAR 30,82	0.008	< 0.001	0.007	0.101	0.004	< 0.002	0.109
MAY 25,82	APR 27,82	0.027	0.002	0.049	0.294	0.009	< 0.002	0.229
JUN 22,82	MAY 25,82	0.004	0.001	0.006	0.025	0.008	< 0.002	0.041
JUL 20,82	JUN 22,82	0.004	< 0.001	0.014	0.039	0.007	< 0.002	0.030
AUG 17,82	JUL 20,82	0.015	< 0.001	0.019	0.165	0.018	< 0.002	0.141
SEP 14,82	AUG 17,82	0.005	< 0.001	0.012	0.082	0.011	< 0.002	0.064
OCT 12,82	SEP 14,82	0.002	< 0.001	0.005	0.029	0.002	0.003	0.031
NOV 9,82	OCT 12,82	0.002	< 0.001	0.008	0.048	0.005	< 0.002	0.026
DEC 8,82	NOV 9,82	0.002	< 0.001	0.005	0.022	0.005	< 0.002	0.019
JAN 4,83	DEC 8,82	0.002	< 0.001	0.007	0.038	0.004	< 0.002	0.048

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILKESPORT/CUMULATIVE PRECIP. #04

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM UG/L	FREE H+ UG/L
FEB 1,82	JAN 5,82	0.064	0.0002	0.0059
MAR 2,82	FEB 1,82	*****	******	0.1202
MAR 30,82	MAR 2,82	0.003	0.0001	0.0575
APR 27,82	MAR 30,82	0.003	0.0001	0.0081
MAY 25,82	APR 27,82	0.006	0.0020	0.0288
JUN 22,82	MAY 25,82	0.002	< 0.0001	0.0537
JUL 20,82	JUN 22,82	0.003	0.0005	0.1778
AUG 17,82	JUL 20,82	0.002	0.0002	0.0776
SEP 14,82	AUG 17,82	0.002	0.0002	0.0813
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.0794
NOV 9,82	OCT 12,82	0.003	< 0.0001	0.0309
DEC 8,82	NOV 9,82	< 0.001	< 0.0001	0.0661
JAN 4,83	DEC 8,82	0.001	0.0002	0.0309

PART IV

CENTRAL REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	825	900	2	40.6	0	24086	2	1	33		N
MAR 2,82	FEB 2,82	900	650	3	34.2	0	24099	2	1	12		N
MAR 30,82	MAR 2,82	725	810	2	57.7	0	24108	2	1	8		N
APR 27,82	MAR 30,82	824	814	1	75.0	0	38091	2	1	79	A	
MAY 25,82	APR 27,82	820	747	1	44.0	0	24129	2	1	66	AD	
JUN 22,82	MAY 25,82	800	800	*	115.0	9	20	2	1	63		M
JUL 20,82	JUN 22,82	710	705	1	76.0	0	24144	2	1	25	A	N
AUG 17,82	JUL 20,82	710	710	*	49.0	0	24155	2	1	70		H
SEP 14,82	AUG 17,82	700	800	1	61.2	0	24162	2	1	36	AC	N
OCT 12,82	SEP 14,82	800	900	1	107.6	9	24170	2	1	75		
NOV 9,82	OCT 12,82	800	800	1	70.0	0	24187	2	1	***	EG	
DEC 7,82	NOV 9,82	800	740	1	64.7	0	24195	2	1	100		
JAN 4,83	DEC 7,82	800	800	3	72.6	0	24203	2	1	***	GH	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82	U	444.0	20.5		4.53		0.0708		1.90	0.58		0.74
MAR 2,82	FEB 2,82	U	134.0	*****		4.09		******		3.45	0.80		0.70
MAR 30,82	MAR 2,82	U	164.0	49.0		4.01		0.1360		3.75	0.84		0.35
APR 27,82	MAR 30,82		1926.0	34.8		4.27		0.0832		3.95	0.56		0.49
MAY 25,82	APR 27,82		953.0	38.9		4.24		0.0792		6.25	0.70		1.23
JUN 22,82	MAY 25,82		2384.0	47.0	U	7.27		0.0420		5.75	0.59	U	2.71
JUL 20,82	JUN 22,82	U	626.0	34.5		4.29		0.0814		4.40	0.55		0.75
AUG 17,82	JUL 20,82		1121.0	10.6	U	5.44	U	0.0286		1.60	0.27		0.41
SEP 14,82	AUG 17,82	U	717.0	34.0		4.11		0.0888		4.00	0.51		0.60
OCT 12,82	SEP 14,82		2624.0	36.2		3.98		0.1086		3.45	0.49		0.20
NOV 9,82	OCT 12,82		******	*****		*****		******		*****	*****		*****
DEC 7,82	NOV 9,82		2118.0	31.4		4.14		0.0920		2.20	0.46		0.19
JAN 4,83	DEC 7,82		1464.0	12.9		4.55		0.0468		1.00	0.22		0.10

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.29	0.34	0.090	0.060	0.160	0.164	0.036
MAR 2,82	FEB 2,82	0.28	*****	0.040	0.045	0.170	0.346	*****
MAR 30,82	MAR 2,82	0.16	0.70	0.020	0.030	0.075	0.490	0.011
APR 27,82	MAR 30,82	0.15	0.59	0.060	0.050	0.060	0.480	0.011
MAY 25,82	APR 27,82	0.16	1.14	0.100	0.085	0.060	0.950	0.063
JUN 22,82	MAY 25,82	0.13	U 4.95	0.130	U 0.490	0.035	U 3.350	U 0.215
JUL 20,82	JUN 22,82	0.18	0.83	0.045	0.100	0.100	0.520	0.017
AUG 17,82	JUL 20,82	0.08	0.66	0.020	0.090	< 0.010	0.510	0.005
SEP 14,82	AUG 17,82	0.14	0.56	0.050	0.030	< 0.010	0.450	0.008
OCT 12,82	SEP 14,82	0.07	0.45	0.015	0.015	0.020	0.378	0.008
NOV 9,82	OCT 12,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	0.23	0.24	0.030	0.020	0.090	0.220	0.004
JAN 4,83	DEC 7,82	0.17	0.20	0.015	0.020	0.080	0.136	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 27,82	MAR 30,82	0.007	< 0.001	0.002	0.042	0.005	< 0.002	0.046
MAY 25,82	APR 27,82	0.008	< 0.001	0.010	0.120	0.010	< 0.002	0.092
JUN 22,82	MAY 25,82	0.003	< 0.001	0.006	0.039	< 0.001	< 0.002	0.035
JUL 20,82	JUN 22,82	0.003	< 0.001	0.008	0.075	0.009	< 0.002	0.043
AUG 17,82	JUL 20,82	0.002	< 0.001	0.024	0.032	< 0.001	< 0.002	0.014
SEP 14,82	AUG 17,82	0.004	< 0.001	0.005	0.056	0.009	< 0.002	0.044
OCT 12,82	SEP 14,82	0.001	< 0.001	0.004	0.012	0.007	< 0.002	0.010
NOV 9,82	OCT 12,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	< 0.001	< 0.001	0.010	0.026	0.006	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : CAMPBELLFORD/CUMULATIVE PRECIP. #13

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0295
MAR 2,82	FEB 2,82	*****	******	0.0813
MAR 30,82	MAR 2,82	*****	******	0.0977
APR 27,82	MAR 30,82	0.001	< 0.0001	0.0537
MAY 25,82	APR 27,82	0.004	0.0001	0.0575
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	U 0.0001
JUL 20,82	JUN 22,82	0.004	0.0002	0.0513
AUG 17,82	JUL 20,82	0.001	< 0.0001	U 0.0036
SEP 14,82	AUG 17,82	0.003	< 0.0001	0.0776
OCT 12,82	SEP 14,82	0.020	0.0001	0.1047
NOV 9,82	OCT 12,82	*****	******	******
DEC 7,82	NOV 9,82	*****	******	0.0724
JAN 4,83	DEC 7,82	< 0.002	< 0.0001	0.0282

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP. #12 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	815	700	2	68.0	0	29058	2	1	***	G	
MAR 2,82	FEB 2,82	700	815	2	44.0	0	29067	2	1	***	G	N
MAR 30,82	MAR 2,82	815	700	3	72.0	0	29071	2	1	50	I	
APR 27,82	MAR 30,82	700	800	3	66.0	0	29081	2	1	83		
MAY 25,82	APR 27,82	700	700	1	19.0	0	29091	2	1	119	C	
JUN 22,82	MAY 25,82	600	700	1	119.0	0	38122	2	1	32		N
JUL 20,82	JUN 22,82	700	800	1	50.0	0	29103	2	1	87	A	
AUG 17,82	JUL 20,82	700	700	1	47.0	0	29115	2	1	99	C	
SEP 14,82	AUG 17,82	700	730	1	114.0	0	29119	2	1	91	A	HCM
OCT 12,82	SEP 14,82	700	700	1	64.0	0	29131	2	1	96	I	
NOV 9,82	OCT 12,82	700	730	3	70.0	0	29141	2	1	95	A	H
DEC 7,82	NOV 9,82	730	730	1	108.0	0	29151	2	1	91		
JAN 4,83	DEC 7,82	730	730	3	82.0	0	29161	2	1	97		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP. #12 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB		TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		1207.0	18.9	4.41		0.0758		0.90	0.43	0.20
MAR 2,82	FEB 2,82	U	366.0	18.5	4.40		0.0686		0.85	0.39	0.14
MAR 30,82	MAR 2,82		1189.0	37.6	4.15		0.1080		2.30	0.74	0.35
APR 27,82	MAR 30,82		1789.0	38.8	4.23		0.0946		4.30	0.76	0.63
MAY 25,82	APR 27,82		740.0	46.7	4.16		0.1186		6.45	0.79	0.99
JUN 22,82	MAY 25,82	U	1258.0	44.0	4.04		0.1094		4.25	0.60	0.23
JUL 20,82	JUN 22,82		1421.0	18.4	4.70		0.0418		2.90	0.31	0.23
AUG 17,82	JUL 20,82		1525.0	31.6	4.16		0.0800		3.15	0.61	0.45
SEP 14,82	AUG 17,82		3370.0	16.1	U 5.89		U 0.0196		2.50	0.30	0.34
OCT 12,82	SEP 14,82		1995.0	38.5	4.03		0.1098		3.65	0.50	0.18
NOV 9,82	OCT 12,82		2160.0	10.4	5.14		0.0360		1.65	0.30	0.18
DEC 7,82	NOV 9,82		3225.0	24.0	4.30		0.0642		1.95	0.30	0.10
JAN 4,83	DEC 7,82		2600.0	12.7	4.66		0.0462		1.10	0.22	0.14

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP. #12 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.32	0.17	0.025	0.020	0.145	0.088	0.010
MAR 2,82	FEB 2,82	0.19	0.23	0.015	< 0.005	0.045	0.152	0.013
MAR 30,82	MAR 2,82	0.26	0.34	0.045	0.025	0.125	0.208	0.008
APR 27,82	MAR 30,82	0.20	0.70	0.060	0.045	0.050	0.560	0.023
MAY 25,82	APR 27,82	0.14	0.90	0.170	0.125	0.035	0.730	0.033
JUN 22,82	MAY 25,82	0.04	0.67	0.030	0.050	0.025	0.560	0.010
JUL 20,82	JUN 22,82	0.14	0.98	0.060	0.240	0.065	0.690	0.084
AUG 17,82	JUL 20,82	0.18	0.57	0.075	0.200	0.030	0.390	0.029
SEP 14,82	AUG 17,82	0.08	0.56	0.050	0.055	0.025	0.450	0.005
OCT 12,82	SEP 14,82	0.07	0.29	0.020	0.010	0.030	0.312	< 0.003
NOV 9,82	OCT 12,82	0.12	0.73	0.040	0.055	0.015	0.470	0.027
DEC 7,82	NOV 9,82	0.18	0.20	0.010	0.010	0.060	0.188	0.004
JAN 4,83	DEC 7,82	0.15	0.18	0.045	0.015	0.070	0.118	0.009

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP. #12 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.002	< 0.001	0.004	0.048	0.002	< 0.002	0.028
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.002	< 0.001	0.013	0.037	0.002	< 0.002	0.032
APR 27,82	MAR 30,82	0.010	0.001	0.007	0.085	0.009	0.002	0.132
MAY 25,82	APR 27,82	0.014	0.001	0.007	0.171	0.010	< 0.002	0.139
JUN 22,82	MAY 25,82	0.003	< 0.001	0.006	0.038	0.008	< 0.002	0.023
JUL 20,82	JUN 22,82	0.003	< 0.001	0.006	0.038	0.003	< 0.002	0.021
AUG 17,82	JUL 20,82	0.004	< 0.001	0.008	0.025	0.005	< 0.002	0.014
SEP 14,82	AUG 17,82	0.002	< 0.001	0.003	0.021	0.007	< 0.002	0.017
OCT 12,82	SEP 14,82	0.002	< 0.001	0.004	0.014	0.006	< 0.002	< 0.008
NOV 9,82	OCT 12,82	0.001	< 0.001	0.002	0.016	0.005	< 0.002	0.017
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.002	0.010	0.006	< 0.002	0.009
JAN 4,83	DEC 7,82	0.002	< 0.001	0.002	0.029	0.003	< 0.002	0.033

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : COLDWATER/CUMULATIVE PRECIP. #12

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.040	< 0.0001	0.0389
MAR 2,82	FEB 2,82	*****	******	0.0398
MAR 30,82	MAR 2,82	0.002	< 0.0001	0.0708
APR 27,82	MAR 30,82	0.003	0.0002	0.0589
MAY 25,82	APR 27,82	< 0.002	0.0001	0.0692
JUN 22,82	MAY 25,82	< 0.002	< 0.0001	0.0912
JUL 20,82	JUN 22,82	0.002	< 0.0001	0.0200
AUG 17,82	JUL 20,82	0.001	0.0001	0.0692
SEP 14,82	AUG 17,82	0.001	< 0.0001	U 0.0013
OCT 12,82	SEP 14,82	< 0.002	< 0.0001	0.0933
NOV 9,82	OCT 12,82	< 0.001	< 0.0001	0.0072
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0501
JAN 4,83	DEC 7,82	< 0.001	< 0.0001	0.0219

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP. #20 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	845	2	54.0	0	29059	2	1	***	G	
MAR 2,82	FEB 2,82	845	1130	2	46.0	0	29063	2	1	78	FL	
MAR 30,82	MAR 2,82	1130	850	3	63.0	0	29075	2	1	88		
APR 27,82	MAR 30,82	850	930	1	75.0	0	29083	2	1	84		T
MAY 25,82	APR 27,82	830	1045	1	36.0	0	29087	2	1	70	C	T
JUN 22,82	MAY 25,82	945	1100	1	141.0	0	29095	2	1	92	J	
JUL 20,82	JUN 22,82	1000	1030	1	62.0	0	29101	2	1	86	BC	
AUG 17,82	JUL 20,82	930	900	1	22.0	0	29109	2	1	107	C	
SEP 14,82	AUG 17,82	910	835	1	111.0	0	29117	2	1	91		
OCT 12,82	AUG 14,82	835	900	1	88.0	0	29129	2	1	83		
NOV 9,82	OCT 12,82	900	1015	4	85.0	0	29139	2	1	98		
DEC 7,82	NOV 9,82	1015	950	1	155.0	0	29149	2	1	88	L	
JAN 4,83	DEC 7,82	950	1000	4	94.0	0	29159	2	1	82	LF	

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ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP. #20 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	1344.0	20.5	4.33	0.0788	0.95	0.45	0.14
MAR 2,82	FEB 2,82	1170.0	26.6	4.21	0.1020	1.20	0.62	0.16
MAR 30,82	MAR 2,82	1807.0	37.5	4.13	0.1110	2.40	0.62	0.16
APR 27,82	MAR 30,82	2046.0	39.5	4.23	U 0.0095	4.15	0.74	0.56
MAY 25,82	APR 27,82	825.0	51.5	3.93	0.1050	7.15	0.74	0.76
JUN 22,82	MAY 25,82	4225.0	43.0	4.00	0.1106	4.00	0.45	0.06
JUL 20,82	JUN 22,82	1745.0	31.8	4.12	0.0850	3.40	0.39	0.11
AUG 17,82	JUL 20,82	768.0	29.7	4.25	0.0870	3.20	0.54	0.30
SEP 14,82	AUG 17,82	3290.0	18.4	4.30	0.0612	2.15	0.30	0.11
OCT 12,82	AUG 14,82	2380.0	41.5	4.02	0.1164	4.55	0.69	0.36
NOV 9,82	OCT 12,82	2710.0	16.4	4.45 4.88	0.0618	1.30 1.44	0.26 .35	0.08
DEC 7,82	NOV 9,82	4470.0	26.1	4.25 4.37	0.0762	2.00 2.34	0.36 .43	0.07
JAN 4,83	DEC 7,82	2525.0	21.5	4.31 4.39	0.0656	1.75 2.14	0.35 .43	0.09

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP. #20 PAGE : 3

REMOVAL DATE	EXPOSURE DATE		CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82		0.21	0.09	0.005	0.010	0.100	0.066	0.002
MAR 2,82	FEB 2,82		0.18	0.18	0.025	0.015	0.050	0.138	0.002
MAR 30,82	MAR 2,82		0.15	0.34	0.020	0.015	0.075	0.282	0.006
APR 27,82	MAR 30,82		0.17	0.60	0.050	0.035	0.040	0.490	0.020
MAY 25,82	APR 27,82		0.16	1.13	0.155	0.110	0.055	0.890	0.038
JUN 22,82	MAY 25,82	<W	0.01	0.40	0.005	< 0.015	< 0.010	0.340	< 0.002
JUL 20,82	JUN 22,82		0.08	0.40	0.040	0.035	0.030	0.356	< 0.002
AUG 17,82	JUL 20,82		0.04	0.98	0.050	0.085	0.015	0.610	0.009
SEP 14,82	AUG 17,82		0.08	0.38	0.005	< 0.010	< 0.005	0.340	< 0.001
OCT 12,82	AUG 14,82		0.11	0.51	0.045	0.010	0.045	0.550	0.005
NOV 9,82	OCT 12,82		0.08	0.23	0.020	0.015	0.010	0.146	0.004
DEC 7,82	NOV 9,82		0.16	0.23	0.010	< 0.005	0.065	0.188	< 0.003
JAN 4,83	DEC 7,82		0.15	0.22	0.025	0.015	0.080	0.178	0.012

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP. #20 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.002	< 0.001	0.004	0.030	0.003	< 0.002	0.016
MAR 2,82	FEB 2,82	< 0.001	< 0.001	0.004	0.033	0.006	< 0.002	0.024
MAR 30,82	MAR 2,82	0.001	< 0.001	0.003	0.022	0.002	< 0.002	0.011
APR 27,82	MAR 30,82	*****	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82	0.010	< 0.001	0.006	0.133	0.009	< 0.002	0.111
JUN 22,82	MAY 25,82	0.001	< 0.001	0.003	0.012	0.007	< 0.002	0.005
JUL 20,82	JUN 22,82	0.003	< 0.001	0.005	0.027	0.004	< 0.002	0.021
AUG 17,82	JUL 20,82	0.004	< 0.001	0.013	0.033	< 0.001	< 0.002	0.029
SEP 14,82	AUG 17,82	0.001	< 0.001	0.002	0.009	0.007	< 0.002	0.006
OCT 12,82	AUG 14,82	0.003	< 0.001	0.006	0.026	0.010	< 0.002	0.022
NOV 9,82	OCT 12,82	< 0.001	< 0.001	< 0.003	0.007	< 0.001	< 0.002	< 0.007
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.002	0.008	0.007	< 0.002	0.006
JAN 4,83	DEC 7,82	0.001	< 0.001	0.003	0.037	0.004	< 0.002	0.019

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORSET/CUMULATIVE PRECIP. #20

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.021	< 0.0001	0.0468
MAR 2,82	FEB 2,82	< 0.002	0.0001	0.0617
MAR 30,82	MAR 2,82	< 0.002	0.0003	0.0741
APR 27,82	MAR 30,82	*****	******	0.0589
MAY 25,82	APR 27,82	< 0.002	0.0001	0.1175
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	0.1000
JUL 20,82	JUN 22,82	< 0.002	< 0.0001	0.0759
AUG 17,82	JUL 20,82	0.002	< 0.0001	0.0562
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0501
OCT 12,82	AUG 14,82	0.001	< 0.0001	0.0955
NOV 9,82	OCT 12,82	< 0.001	< 0.0001	0.0355
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0562
JAN 4,83	DEC 7,82	< 0.001	< 0.0001	0.0490

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP. #10 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 4,82	800	800	3	41.0	0	38044	2	1	***	F	
MAR 2,82	FEB 2,82	800	830	4	33.0	0	38051	2	1	29	FJM	NH
MAR 30,82	MAR 2,82	830	830	3	56.6	0	38069	2	1	***	EG	
APR 27,82	MAR 30,82	830	800	1	67.7	0	38083	2	1	78	A	
MAY 25,82	APR 27,82	830	930	1	50.0	0	38095	2	1	62	CA	HM
JUN 22,82	MAY 25,82	1000	800	1	103.0	0	38103	2	1	***	G	H
JUL 20,82	JUN 22,82	800	1000	*	63.4	0	10695	2	1	43		N
AUG 17,82	JUL 20,82	1000	800	*	90.0	0	38126	2	1	60		
SEP 14,82	AUG 17,82	800	830	1	97.0	0	38139	2	1	55	FJ	
OCT 12,82	SEP 14,82	830	900	1	130.0	0	38169	2	1	69	F	
NOV 9,82	OCT 12,82	900	845	*	52.0	0	10701	2	1	84	A	
DEC 7,82	NOV 9,82	845	900	1	86.0	0	38212	2	1	***	GF	N
JAN 4,83	DEC 7,82	830	930	4	80.0	0	38207	2	1	***	FIG	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP. #10

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 4,82	******	*****	*****	******	*****	*****	*****
MAR 2,82	FEB 2,82	U 317.0	37.0	U 5.38	0.0412	4.50	1.33	U 2.50
MAR 30,82	MAR 2,82	******	*****	*****	******	*****	*****	*****
APR 27,82	MAR 30,82	1717.0	41.7	U 7.12	U 0.0308	6.05	0.90	U 3.31
MAY 25,82	APR 27,82	1015.0	47.2	U 5.14	U 0.0358	U 12.05	1.03	U 2.54
JUN 22,82	MAY 25,82	2131.0	36.0	4.51	0.0540	6.65	0.94	U 1.18
JUL 20,82	JUN 22,82	U 900.0	U 70.5	U 6.84	U 0.0342	U 17.25	U 1.71	U 4.95
AUG 17,82	JUL 20,82	1757.0	35.1	U 6.78	U 0.0242	6.85	0.84	U 2.20
SEP 14,82	AUG 17,82	1752.0	29.4	U 6.73	U 0.0264	U 6.25	0.62	U 2.32
OCT 12,82	SEP 14,82	2916.0	31.7	4.27	0.0722	4.55	0.64	U 0.82
NOV 9,82	OCT 12,82	1426.0	21.5	4.53	0.0734	2.95	0.54	0.62
DEC 7,82	NOV 9,82	U 10.0	*****	*****	******	*****	*****	*****
JAN 4,83	DEC 7,82	1737.0	20.8	U 6.62	U 0.0230	3.00	0.33	U 1.56

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP. #10 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 4,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	2.53	0.55	U 1.000	0.020	U 1.800	0.260	0.010
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 27,82	MAR 30,82	0.70	1.33	U 1.050	0.120	0.290	0.830	0.088
MAY 25,82	APR 27,82	0.31	1.75	0.050	0.135	0.140	1.010	0.095
JUN 22,82	MAY 25,82	0.24	U 2.10	U 0.445	0.275	0.045	U 1.410	U 0.265
JUL 20,82	JUN 22,82	U 0.68	U 2.20	U 2.250	0.140	U 0.120	U 1.670	0.040
AUG 17,82	JUL 20,82	0.28	U 1.25	U 0.865	0.250	0.040	0.940	0.028
SEP 14,82	AUG 17,82	0.25	0.75	U 1.060	0.040	0.025	0.620	0.017
OCT 12,82	SEP 14,82	0.25	0.86	U 0.285	0.140	0.025	0.650	0.055
NOV 9,82	OCT 12,82	0.23	0.56	0.260	0.050	0.085	0.450	0.016
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.76	0.54	U 0.500	0.035	0.430	0.290	0.015

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP. #10 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 4,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 27,82	MAR 30,82	0.005	0.001	0.009	0.139	0.003	< 0.002	0.123
MAY 25,82	APR 27,82	0.011	< 0.001	0.036	0.276	0.005	< 0.002	0.166
JUN 22,82	MAY 25,82	0.011	< 0.001	0.014	0.019	0.010	< 0.002	0.018
JUL 20,82	JUN 22,82	0.021	< 0.001	0.015	0.151	0.009	< 0.002	0.067
AUG 17,82	JUL 20,82	0.011	< 0.001	0.004	0.088	0.007	< 0.002	0.048
SEP 14,82	AUG 17,82	0.012	< 0.001	0.011	0.073	0.008	< 0.002	0.026
OCT 12,82	SEP 14,82	0.005	< 0.001	0.010	0.037	0.015	< 0.002	0.026
NOV 9,82	OCT 12,82	0.004	0.001	0.013	0.027	0.010	< 0.002	0.020
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.008	< 0.001	0.009	0.033	0.011	< 0.002	0.022

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MILTON/CUMULATIVE PRECIP. #10

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 4,82	*****	******	******
MAR 2,82	FEB 2,82	*****	******	U 0.0042
MAR 30,82	MAR 2,82	*****	******	******
APR 27,82	MAR 30,82	0.004	0.0001	U 0.0001
MAY 25,82	APR 27,82	0.006	0.0002	U 0.0072
JUN 22,82	MAY 25,82	0.001	0.0001	0.0309
JUL 20,82	JUN 22,82	0.002	< 0.0001	U 0.0001
AUG 17,82	JUL 20,82	0.001	< 0.0001	U 0.0002
SEP 14,82	AUG 17,82	0.001	0.0001	U 0.0002
OCT 12,82	SEP 14,82	0.001	0.0002	0.0537
NOV 9,82	OCT 12,82	0.001	0.0001	0.0295
DEC 7,82	NOV 9,82	*****	******	******
JAN 4,83	DEC 7,82	< 0.002	0.0001	U 0.0002

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP. #11 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 4,82	1100	1700	3	81.0	9	38042	2	1	15	F	NCM
MAR 2,82	FEB 4,82	1700	1250	4	30.6	9	38052	2	1	52	FMJ	
MAR 29,82	MAR 2,82	1350	1700	3	80.4	0	38064	2	1	48		N
APR 27,82	MAR 29,82	1700	900	1	70.8	0	10546	2	1	***	G	N
MAY 25,82	APR 27,82	800	1130	1	32.0	0	38093	2	1	***	CG	H
JUN 21,82	MAY 25,82	1800	1800	1	95.0	0	38101	2	1	57		H
JUL 19,82	JUN 21,82	1800	1900	1	65.0	0	10691	2	1	97		
AUG 16,82	JUL 19,82	1700	1900	1	40.0	0	38127	2	1	75		
SEP 13,82	AUG 16,82	1900	1800	1	83.0	0	38137	2	1	81		
OCT 12,82	SEP 13,82	1800	1300	1	113.0	0	38175	2	1	79		
NOV 8,82	OCT 12,82	1300	1500	2	85.0	0	10703	2	1	84		
DEC 6,82	NOV 8,82	1700	1600	1	94.0	0	38211	2	1	73		
JAN 3,83	DEC 6,82	1600	1603	1	84.0	0	38209	2	1	38		N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP. #11 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L		NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 4,82	U	397.0	78.0	U	7.39	U	0.0256	U	2.15		0.39	U	5.00
MAR 2,82	FEB 4,82		520.0	21.9		4.50		0.0686		2.10		0.56		0.77
MAR 29,82	MAR 2,82	U	1268.0	42.5		4.15		0.1152		3.75		0.74		0.69
APR 27,82	MAR 29,82	U	260.0	47.9	U	7.04	U	0.0342		7.15		1.11	U	5.75
MAY 25,82	APR 27,82		1213.0	35.3	U	6.40	U	0.0268		8.35		0.83	U	2.63
JUN 21,82	MAY 25,82		1774.0	34.5	U	6.44		0.0454		6.45		0.90		1.02
JUL 19,82	JUN 21,82		2049.0	32.5		4.21		0.0764		4.40		0.54		0.57
AUG 16,82	JUL 19,82		982.0	17.1		4.64		0.0410		2.15		0.34		0.32
SEP 13,82	AUG 16,82		2186.0	26.6		4.26		0.0734		3.45		0.42		0.35
OCT 12,82	SEP 13,82		2935.0	33.0		4.05		0.0958		3.15		0.47		0.17
NOV 8,82	OCT 12,82		2335.0	16.0		4.53		0.0660		1.70		0.26		0.20
DEC 6,82	NOV 8,82		2258.0	25.4		4.27		0.0802		2.40		0.38		0.22
JAN 3,83	DEC 6,82	U	1049.0	20.2		4.41		0.0630		1.80		0.30		0.21

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP. #11 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 4,82	U 1.43	U 1.28	U 1.650	U 0.340	U 0.810	0.208	U 0.365
MAR 2,82	FEB 4,82	1.23	0.52	0.040	0.005	0.395	0.322	0.006
MAR 29,82	MAR 2,82	0.24	0.66	0.045	0.015	0.200	0.450	0.009
APR 27,82	MAR 29,82	1.14	U 2.38	0.260	0.080	0.655	0.780	U 0.315
MAY 25,82	APR 27,82	0.27	1.33	0.220	0.045	0.095	0.920	0.035
JUN 21,82	MAY 25,82	0.27	U 2.90	0.140	U 0.385	0.085	U 2.650	U 0.270
JUL 19,82	JUN 21,82	0.13	0.80	0.075	0.055	0.030	0.610	0.015
AUG 16,82	JUL 19,82	<W 0.01	0.57	0.050	0.050	< 0.010	0.450	< 0.003
SEP 13,82	AUG 16,82	0.15	0.70	0.050	< 0.010	< 0.010	0.560	0.006
OCT 12,82	SEP 13,82	0.08	0.42	0.025	0.050	0.030	0.348	0.019
NOV 8,82	OCT 12,82	0.04	0.33	0.035	0.010	0.050	0.256	0.017
DEC 6,82	NOV 8,82	0.15	0.49	0.040	0.055	0.105	0.278	0.014
JAN 3,83	DEC 6,82	0.18	0.30	0.030	0.010	0.085	0.174	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP. #11 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 4,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 4,82	0.004	< 0.001	0.005	0.070	< 0.001	< 0.002	0.048
MAR 29,82	MAR 2,82	0.003	< 0.001	0.013	0.032	0.005	< 0.002	0.026
APR 27,82	MAR 29,82	*****	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82	0.002	< 0.001	0.025	0.136	< 0.001	< 0.002	0.078
JUN 21,82	MAY 25,82	0.003	< 0.001	0.011	0.027	0.002	< 0.002	0.021
JUL 19,82	JUN 21,82	0.003	< 0.001	0.006	0.032	0.010	< 0.002	0.017
AUG 16,82	JUL 19,82	0.004	< 0.001	J 0.020	0.028	0.002	< 0.002	0.008
SEP 13,82	AUG 16,82	0.003	< 0.001	0.005	0.024	0.007	< 0.002	0.015
OCT 12,82	SEP 13,82	0.001	< 0.001	0.004	0.015	0.007	< 0.002	0.012
NOV 8,82	OCT 12,82	0.001	< 0.001	0.002	0.009	0.005	< 0.002	0.008
DEC 6,82	NOV 8,82	0.001	< 0.001	J 0.011	0.025	0.006	< 0.002	0.011
JAN 3,83	DEC 6,82	0.002	< 0.001	0.005	0.021	0.006	< 0.002	0.019

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : UXBRIDGE/CUMULATIVE PRECIP. #11

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 4,82	*****	******	U 0.0000
MAR 2,82	FEB 4,82	0.008	0.0002	0.0316
MAR 29,82	MAR 2,82	< 0.002	0.0002	0.0708
APR 27,82	MAR 29,82	*****	******	U 0.0001
MAY 25,82	APR 27,82	0.009	0.0003	U 0.0004
JUN 21,82	MAY 25,82	0.002	0.0001	U 0.0004
JUL 19,82	JUN 21,82	0.001	< 0.0001	0.0617
AUG 16,82	JUL 19,82	0.002	< 0.0001	0.0229
SEP 13,82	AUG 16,82	< 0.001	< 0.0001	0.0550
OCT 12,82	SEP 13,82	0.001	0.0001	0.0891
NOV 8,82	OCT 12,82	< 0.001	< 0.0001	0.0295
DEC 6,82	NOV 8,82	0.002	0.0006	0.0537
JAN 3,83	DEC 6,82	< 0.002	< 0.0001	0.0389

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP. #18 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
MAR 2,82	DEC 31,81	1200	1430	2	100.0	0	29065	2	1	20		NHM
MAR 30,82	MAR 2,82	1430	1400	3	76.0	0	29073	2	1	79		
APR 27,82	MAR 30,82	1400	1430	1	75.0	0	29079	2	1	80		
MAY 25,82	APR 27,82	1330	1515	1	65.0	0	29089	2	1	***	CG	
JUN 22,82	MAY 25,82	1415	1830	1	143.0	0	29099	2	1	87	AC	
JUL 20,82	JUN 22,82	1730	930	1	36.0	0	29107	2	1	72		T
AUG 17,82	JUL 20,82	830	800	1	23.0	0	29113	2	1	103		
SEP 14,82	AUG 17,82	800	900	1	117.0	0	29120	2	1	68	FJ	
OCT 12,82	SEP 14,82	900	900	1	119.0	0	29132	2	1	83		HCM
NOV 9,82	OCT 12,82	900	900	1	107.8	9	29142	2	1	***	G	
DEC 7,82	NOV 9,82	900	830	1	154.0	0	29152	2	1	84		
JAN 4,83	DEC 7,82	830	830	4	94.0	0	29162	2	1	73		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP. #18 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
MAR 2,82	DEC 31,81	U	657.0	25.4		4.24		0.0904	1.45	0.55	0.14
MAR 30,82	MAR 2,82		1971.0	39.7		4.11		0.1146	2.40	0.69	0.17
APR 27,82	MAR 30,82		1949.0	46.5		4.14		0.1194	4.90	0.78	0.54
MAY 25,82	APR 27,82		1680.0	32.3		4.25		0.0916	3.75	0.47	0.35
JUN 22,82	MAY 25,82		4050.0	51.0		3.96		0.1340	5.05	0.63	0.14
JUL 20,82	JUN 22,82		845.0	41.6		3.93		0.1094	4.50	0.53	0.28
AUG 17,82	JUL 20,82		770.0	20.8		4.35		0.0650	2.25	0.30	0.20
SEP 14,82	AUG 17,82		2595.0	25.2		4.14		0.0812	2.75	0.40	0.18
OCT 12,82	SEP 14,82		3235.0	36.0	U	4.42	U	0.0592	3.30	0.50	0.14
NOV 9,82	OCT 12,82		2200.0	19.5		4.44		0.0736	1.55	0.33	0.13
DEC 7,82	NOV 9,82		4205.0	27.5		4.22		0.0744	2.15	0.40	0.11
JAN 4,83	DEC 7,82		2250.0	28.6		4.21		0.0868	2.45	0.51	0.12

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP. #18 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
MAR 2,82	DEC 31,81	0.17	0.26	0.015	0.025	U 0.700	0.194	0.004
MAR 30,82	MAR 2,82	0.15	0.41	0.015	0.020	0.060	0.320	0.009
APR 27,82	MAR 30,82	0.20	0.69	0.060	0.045	0.065	0.550	0.015
MAY 25,82	APR 27,82	0.08	0.45	0.050	0.070	0.015	0.390	0.033
JUN 22,82	MAY 25,82	0.09	0.56	0.020	0.075	0.020	0.500	0.008
JUL 20,82	JUN 22,82	0.10	0.65	0.050	0.035	< 0.005	0.520	0.007
AUG 17,82	JUL 20,82	0.07	0.39	0.020	0.080	< 0.005	0.330	< 0.001
SEP 14,82	AUG 17,82	0.10	0.37	0.025	0.020	0.015	0.342	< 0.003
OCT 12,82	SEP 14,82	0.07	0.34	0.005	0.010	0.030	0.380	0.005
NOV 9,82	OCT 12,82	0.12	0.28	0.025	0.015	< 0.005	0.094	0.004
DEC 7,82	NOV 9,82	0.18	0.27	0.030	0.025	0.075	0.206	< 0.003
JAN 4,83	DEC 7,82	0.25	0.32	0.040	0.030	0.140	0.212	0.012

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP. #18 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
MAR 2,82	DEC 31,81	0.002	0.001	0.031	0.048	0.011	< 0.002	0.021
MAR 30,82	MAR 2,82	0.002	< 0.001	0.005	0.036	0.009	< 0.002	0.039
APR 27,82	MAR 30,82	0.008	0.001	0.008	0.067	*****	0.002	0.081
MAY 25,82	APR 27,82	0.004	< 0.001	0.007	0.060	0.006	< 0.002	0.039
JUN 22,82	MAY 25,82	0.002	< 0.001	0.008	0.020	0.008	< 0.002	0.013
JUL 20,82	JUN 22,82	0.003	< 0.001	0.008	0.031	0.008	< 0.002	0.025
AUG 17,82	JUL 20,82	0.002	< 0.001	0.010	0.034	< 0.001	< 0.002	0.018
SEP 14,82	AUG 17,82	0.002	< 0.001	0.003	0.017	0.008	< 0.002	0.010
OCT 12,82	SEP 14,82	0.001	< 0.001	0.005	0.013	0.008	< 0.002	0.014
NOV 9,82	OCT 12,82	< 0.001	< 0.001	< 0.003	0.007	< 0.001	< 0.002	0.008
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.002	0.010	0.007	< 0.002	0.008
JAN 4,83	DEC 7,82	0.002	0.001	0.003	0.032	0.004	< 0.002	0.022

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WILBERFORCE/CUMULATIVE PRECIP. #18

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
MAR 2,82	DEC 31,81	0.003	0.0016	0.0575
MAR 30,82	MAR 2,82	0.001	0.0009	0.0776
APR 27,82	MAR 30,82	0.003	0.0002	0.0724
MAY 25,82	APR 27,82	< 0.002	0.0001	0.0562
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	0.1096
JUL 20,82	JUN 22,82	0.003	< 0.0001	0.1175
AUG 17,82	JUL 20,82	< 0.002	< 0.0001	0.0447
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0724
OCT 12,82	SEP 14,82	< 0.001	< 0.0001	U 0.0380
NOV 9,82	OCT 12,82	< 0.001	< 0.0001	0.0363
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0603
JAN 4,83	DEC 7,82	< 0.001	0.0002	0.0617

PART V

SOUTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	800	3	22.1	0	24095	2	1	53		
MAR 2,82	FEB 2,82	830	800	3	38.4	0	24107	2	1	44		N
MAR 30,82	MAR 2,82	900	800	3	44.6	0	24117	2	1	18	IFHK	N
APR 25,82	MAR 30,82	900	1750	1	50.3	9	38085	2	1	60	AI	
MAY 25,82	APR 25,82	1800	700	1	31.0	0	24127	2	1	76		
JUN 22,82	MAY 25,82	800	800	1	119.0	0	30	2	1	17	AQ	N
JUL 20,82	JUN 22,82	800	700	1	53.0	0	24138	2	1	***	IFGH	N
AUG 17,82	JUL 20,82	900	900	1	76.0	0	24147	2	1	84	A	
SEP 14,82	AUG 17,82	900	800	1	138.0	0	24167	2	1	***	AG	N
OCT 12,82	SEP 14,82	900	800	1	64.0	0	24172	2	1	87		
NOV 9,82	OCT 12,82	700	800	1	76.0	0	24179	2	1	79	A	
DEC 7,82	NOV 9,82	800	800	1	51.1	0	24193	2	1	110	A	
JAN 4,83	DEC 7,82	800	800	3	65.1	0	24201	2	1	***	GH	NH

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		382.0	35.1	4.24	0.0998	2.20	0.87	0.39
MAR 2,82	FEB 2,82	U	554.0	30.8	4.20	0.1024	1.70	0.82	0.36
MAR 30,82	MAR 2,82	U	261.0	54.5	3.99	0.1304	3.55	1.28	0.75
APR 25,82	MAR 30,82		987.0	42.3	4.18	0.1048	5.20	0.79	0.89
MAY 25,82	APR 25,82		773.0	31.7	4.46	0.0514	5.55	0.63	1.69
JUN 22,82	MAY 25,82	U	685.0	51.0	3.90	0.1262	5.75	0.61	0.23
JUL 20,82	JUN 22,82	U	729.0	50.1	4.07	0.1110	6.60	0.73	0.86
AUG 17,82	JUL 20,82		2076.0	28.6	4.22	0.0784	3.15	0.39	0.22
SEP 14,82	AUG 17,82	U	1660.0	24.3	4.22	0.0712	2.80	0.28	0.25
OCT 12,82	SEP 14,82		1821.0	37.6	4.00	0.1122	3.75	0.46	0.17
NOV 9,82	OCT 12,82		1969.0	22.5	4.32	0.0724	2.35	0.43	0.42
DEC 7,82	NOV 9,82		1827.0	29.1	4.23	0.0732	3.00	0.57	0.49
JAN 4,83	DEC 7,82	U	589.0	10.9	4.74	0.0386	1.05	0.20	0.33

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	U 1.70	0.08	0.045	0.090	U 1.090	0.390	0.060
MAR 2,82	FEB 2,82	0.31	0.44	0.030	0.040	0.195	0.332	0.010
MAR 30,82	MAR 2,82	0.48	0.68	0.070	0.040	0.330	0.490	0.013
APR 25,82	MAR 30,82	0.28	0.95	0.060	U 0.145	0.130	0.770	U 0.264
MAY 25,82	APR 25,82	0.23	0.78	0.140	0.140	0.130	0.560	0.022
JUN 22,82	MAY 25,82	0.08	0.91	0.040	0.045	0.020	0.680	0.021
JUL 20,82	JUN 22,82	0.17	1.20	0.140	0.150	0.055	0.830	0.019
AUG 17,82	JUL 20,82	0.10	0.50	0.030	0.075	0.020	0.460	0.004
SEP 14,82	AUG 17,82	0.15	0.37	0.025	0.055	0.060	0.262	0.004
OCT 12,82	SEP 14,82	0.07	0.49	0.015	0.040	0.025	0.410	0.008
NOV 9,82	OCT 12,82	0.07	0.46	0.040	0.045	0.020	0.278	0.024
DEC 7,82	NOV 9,82	0.22	0.42	0.050	0.015	0.095	0.400	0.009
JAN 4,83	DEC 7,82	0.41	0.34	0.030	0.035	0.225	0.148	0.012

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	0.006	0.002	0.010	0.043	0.012	0.003	0.034
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 25,82	MAR 30,82	0.008	0.001	0.012	0.071	0.013	< 0.002	0.075
MAY 25,82	APR 25,82	0.011	< 0.001	0.016	0.101	0.009	< 0.002	0.076
JUN 22,82	MAY 25,82	0.003	< 0.001	0.008	0.055	0.012	< 0.002	0.032
JUL 20,82	JUN 22,82	0.008	< 0.001	0.008	0.094	0.010	< 0.002	0.072
AUG 17,82	JUL 20,82	0.004	< 0.001	0.005	0.021	0.004	< 0.002	0.015
SEP 14,82	AUG 17,82	0.002	< 0.001	0.005	0.013	0.007	< 0.002	0.007
OCT 12,82	SEP 14,82	0.002	< 0.001	0.007	0.053	0.012	< 0.002	0.015
NOV 9,82	OCT 12,82	0.002	< 0.001	0.015	0.026	0.007	< 0.002	0.016
DEC 7,82	NOV 9,82	0.006	< 0.001	0.002	0.020	0.014	< 0.002	0.016
JAN 4,83	DEC 7,82	0.003	0.002	0.009	0.083	0.007	< 0.002	0.068

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DALHOUSIE MILLS/CUMULATIVE PRECIP. #16

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0575
MAR 2,82	FEB 2,82	0.003	0.0004	0.0631
MAR 30,82	MAR 2,82	*****	******	0.1023
APR 25,82	MAR 30,82	0.008	0.0003	0.0661
MAY 25,82	APR 25,82	0.005	0.0003	0.0347
JUN 22,82	MAY 25,82	0.002	< 0.0001	0.1259
JUL 20,82	JUN 22,82	< 0.002	0.0001	0.0851
AUG 17,82	JUL 20,82	0.001	< 0.0001	0.0603
SEP 14,82	AUG 17,82	0.001	0.0002	0.0603
OCT 12,82	SEP 14,82	0.001	0.0001	0.1000
NOV 9,82	OCT 12,82	0.003	< 0.0001	0.0479
DEC 7,82	NOV 9,82	< 0.002	< 0.0001	0.0589
JAN 4,83	DEC 7,82	< 0.003	< 0.0001	0.0182

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP. #17 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	945	2	49.6	9	24094	2	1	59		
MAR 2,82	FEB 2,82	1005	740	2	20.8	0	24102	2	1	***	GH	
MAR 30,82	MAR 2,82	835	800	3	52.9	0	24113	2	1	82		
APR 27,82	MAR 30,82	810	735	1	44.3	9	24122	2	1	51	A	
MAY 25,82	APR 27,82	740	730	1	15.7	0	24125	2	1	91		
JUN 23,82	MAY 25,82	745	800	1	124.7	9	50	2	1	47		N
JUL 20,82	JUN 23,82	815	705	1	25.0	0	24141	2	1	***	AGH	
AUG 17,82	JUL 20,82	710	725	1	15.0	0	24151	2	1	70	A	H
SEP 14,82	AUG 17,82	730	720	1	69.0	0	24160	2	1	85	R	
OCT 12,82	SEP 14,82	720	700	1	63.0	0	24176	2	1	89		
NOV 9,82	OCT 12,82	740	720	1	49.0	0	24181	2	1	75		HM
DEC 7,82	NOV 9,82	800	1040	1	69.8	9	24198	2	1	92		
JAN 4,83	DEC 7,82	1045	725	3	50.6	0	24206	2	1	***	GH	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP. #17

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		953.0	13.3		4.56	0.0604		0.60	0.33	0.15
MAR 2,82	FEB 2,82		635.0	10.5		4.60	0.0608		0.60	0.24	0.16
MAR 30,82	MAR 2,82		1418.0	23.0		4.34	0.0734	U	1.15	0.47	0.14
APR 27,82	MAR 30,82		740.0	46.0		3.98	0.1164		5.05	0.78	0.48
MAY 25,82	APR 27,82		466.0	44.6		4.08	0.1082		5.40	0.58	0.43
JUN 23,82	MAY 25,82	U	1916.0	41.8		4.04	0.1064		4.05	0.56	0.11
JUL 20,82	JUN 23,82		562.0	26.6		4.45	0.0640		4.05	0.50	0.61
AUG 17,82	JUL 20,82		344.0	16.4	U	5.08	0.0468		2.45	0.29	0.33
SEP 14,82	AUG 17,82		1909.0	29.6		4.14	0.0886		2.95	0.36	0.16
OCT 12,82	SEP 14,82		1832.0	38.8		3.98	0.1096		3.55	0.49	0.16
NOV 9,82	OCT 12,82		1200.0	16.1		4.44	0.0604		1.20	0.27	0.13
DEC 7,82	NOV 9,82		2102.0	24.7		4.29	0.0704		1.80	0.38	0.14
JAN 4,83	DEC 7,82		1407.0	10.1		4.64	0.0424		0.75	0.17	0.09

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP. #17

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.16	0.15	0.030	0.030	0.110	0.060	0.011
MAR 2,82	FEB 2,82	0.11	0.22	0.020	0.035	0.025	0.136	0.002
MAR 30,82	MAR 2,82	0.08	0.26	0.020	0.015	0.030	0.126	0.010
APR 27,82	MAR 30,82	0.17	1.20	0.075	0.035	0.065	0.550	0.059
MAY 25,82	APR 27,82	0.13	1.08	0.070	0.055	0.035	0.610	0.026
JUN 23,82	MAY 25,82	0.10	0.61	0.035	0.035	< 0.010	0.500	0.007
JUL 20,82	JUN 23,82	0.15	1.60	0.115	0.240	0.055	0.650	0.041
AUG 17,82	JUL 20,82	0.11	U 1.48	0.055	0.160	0.020	0.980	0.009
SEP 14,82	AUG 17,82	0.08	0.30	0.020	< 0.015	< 0.010	0.274	< 0.001
OCT 12,82	SEP 14,82	0.06	0.41	0.025	0.030	0.030	0.328	0.009
NOV 9,82	OCT 12,82	0.05	0.36	0.030	0.015	0.015	0.298	0.005
DEC 7,82	NOV 9,82	0.15	0.24	0.030	0.010	0.050	0.134	0.009
JAN 4,83	DEC 7,82	0.16	0.12	0.015	0.010	0.050	U 0.052	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP. #17

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.002	0.002	0.005	0.063	0.004	< 0.002	0.051
MAR 2,82	FEB 2,82	0.001	< 0.001	0.007	0.042	0.005	< 0.002	0.020
MAR 30,82	MAR 2,82	< 0.001	< 0.001	0.003	0.018	0.004	< 0.002	0.008
APR 27,82	MAR 30,82	0.006	< 0.001	0.005	0.062	0.009	< 0.002	0.063
MAY 25,82	APR 27,82	0.008	< 0.001	0.053	0.077	0.010	< 0.002	0.051
JUN 23,82	MAY 25,82	0.002	< 0.001	0.006	0.022	0.008	< 0.002	< 0.008
JUL 20,82	JUN 23,82	0.007	< 0.001	0.011	0.074	0.005	< 0.002	0.038
AUG 17,82	JUL 20,82	0.009	< 0.001	0.017	0.040	< 0.001	< 0.002	0.024
SEP 14,82	AUG 17,82	0.002	< 0.001	0.004	0.014	0.008	< 0.002	0.006
OCT 12,82	SEP 14,82	0.002	< 0.001	0.007	0.035	0.011	< 0.002	0.018
NOV 9,82	OCT 12,82	0.001	< 0.001	0.006	0.015	0.001	< 0.002	0.011
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.002	0.007	0.006	< 0.002	< 0.007
JAN 4,83	DEC 7,82	< 0.001	< 0.001	0.003	0.028	0.003	< 0.002	0.022

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOLDEN LAKE/CUMULATIVE PRECIP. #17

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	< 0.002	< 0.0001	0.0275
MAR 2,82	FEB 2,82	< 0.003	< 0.0001	0.0251
MAR 30,82	MAR 2,82	0.002	0.0001	0.0457
APR 27,82	MAR 30,82	0.006	0.0002	0.1047
MAY 25,82	APR 27,82	0.005	0.0001	0.0832
JUN 23,82	MAY 25,82	0.001	< 0.0001	0.0912
JUL 20,82	JUN 23,82	0.002	0.0002	0.0355
AUG 17,82	JUL 20,82	0.003	< 0.0001	U 0.0083
SEP 14,82	AUG 17,82	< 0.002	< 0.0001	0.0724
OCT 12,82	SEP 14,82	0.001	0.0001	0.1047
NOV 9,82	OCT 12,82	< 0.002	0.0002	0.0363
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0513
JAN 4,83	DEC 7,82	< 0.002	< 0.0001	0.0229

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KALADAR/CUMULATIVE PRECIP. #14 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	805	805	3	45.8	0	24089	2	1	8		N
MAR 2,82	FEB 2,82	800	755	3	14.8	0	24100	2	1	***	GH	
MAR 30,82	MAR 2,82	755	755	1	63.7	0	24116	2	1	***	GH	
APR 27,82	MAR 30,82	755	800	1	89.0	0	24124	2	1	77	A	
MAY 25,82	APR 27,82	800	800	1	50.6	9	24135	2	1	102		
JUN 22,82	MAY 25,82	****	805	1	106.9	9	60	2	1	77	A	
JUL 20,82	JUN 22,82	802	800	1	46.9	9	24142	2	1	***	GH	
AUG 17,82	JUL 20,82	802	755	1	13.0	0	24153	2	1	148	ADN	N
SEP 14,82	AUG 17,82	755	800	1	67.5	0	24158	2	1	28		N
OCT 12,82	SEP 14,82	800	1440	1	92.5	0	24178	2	1	58		
NOV 9,82	OCT 12,82	1445	955	1	77.0	0	24183	2	1	66		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KALADAR/CUMULATIVE PRECIP. #14 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U	126.0	*****	4.68	******	0.55	0.18	0.09
MAR 2,82	FEB 2,82		517.0	52.5	3.96	0.1458	3.85	1.10	0.45
MAR 30,82	MAR 2,82		1222.0	56.2	3.97	0.1498	4.00	0.96	0.31
APR 27,82	MAR 30,82		2237.0	54.0	3.92	U 0.2936	6.60	0.54	0.37
MAY 25,82	APR 27,82		1678.0	38.5	4.12	0.0922	4.20	0.60	0.34
JUN 22,82	MAY 25,82		2694.0	50.1	3.94	0.1278	4.65	0.67	0.16
JUL 20,82	JUN 22,82		849.0	41.3	4.08	0.1056	4.50	0.38	0.21
AUG 17,82	JUL 20,82		627.0	28.5	4.30	0.0754	3.40	0.44	0.32
SEP 14,82	AUG 17,82	U	615.0	31.5	4.08	0.0884	3.25	0.40	0.16
OCT 12,82	SEP 14,82		1746.0	45.8	3.90	0.1290	4.05	0.64	0.20
NOV 9,82	OCT 12,82		1659.0	22.5	4.33	0.0748	1.95	0.38	0.27

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KALADAR/CUMULATIVE PRECIP. #14 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.30	*****	0.015	0.030	0.150	0.092	*****
MAR 2,82	FEB 2,82	U 0.81	0.63	0.060	0.040	U 0.705	0.480	0.005
MAR 30,82	MAR 2,82	0.34	0.68	0.030	0.035	0.280	0.480	0.017
APR 27,82	MAR 30,82	0.20	0.67	0.050	0.065	0.100	0.470	0.025
MAY 25,82	APR 27,82	0.10	0.49	0.045	0.035	0.020	0.400	0.013
JUN 22,82	MAY 25,82	0.14	0.61	0.035	0.040	0.020	0.490	0.012
JUL 20,82	JUN 22,82	0.10	0.46	0.030	0.035	0.025	0.390	0.048
AUG 17,82	JUL 20,82	0.14	0.68	0.045	0.190	0.030	0.530	0.021
SEP 14,82	AUG 17,82	0.09	0.48	0.005	< 0.010	< 0.010	0.354	0.005
OCT 12,82	SEP 14,82	0.10	0.43	0.025	0.025	0.030	0.390	< 0.003
NOV 9,82	OCT 12,82	0.08	0.29	0.050	0.020	0.055	0.224	0.004

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KALADAR/CUMULATIVE PRECIP. #14 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	0.006	< 0.001	0.016	0.082	0.014	< 0.002	0.047
MAR 30,82	MAR 2,82	0.003	< 0.001	0.010	0.039	0.010	< 0.002	0.032
APR 27,82	MAR 30,82	0.005	< 0.001	0.004	0.060	0.006	< 0.002	0.034
MAY 25,82	APR 27,82	0.004	< 0.001	0.005	0.039	0.008	< 0.002	0.029
JUN 22,82	MAY 25,82	0.005	0.001	0.007	0.112	0.012	< 0.002	0.109
JUL 20,82	JUN 22,82	0.002	< 0.001	0.005	0.029	0.005	< 0.002	0.021
AUG 17,82	JUL 20,82	0.004	< 0.001	0.012	0.034	0.005	< 0.002	0.034
SEP 14,82	AUG 17,82	0.002	< 0.001	0.005	0.042	0.007	< 0.002	0.039
OCT 12,82	SEP 14,82	0.002	< 0.001	0.006	0.023	0.010	< 0.002	0.020
NOV 9,82	OCT 12,82	0.001	< 0.001	0.003	0.010	0.004	< 0.002	0.008

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KALADAR/CUMULATIVE PRECIP. #14

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0209
MAR 2,82	FEB 2,82	0.007	0.0003	0.1096
MAR 30,82	MAR 2,82	0.002	< 0.0001	0.1072
APR 27,82	MAR 30,82	0.003	0.0001	0.1202
MAY 25,82	APR 27,82	< 0.002	< 0.0001	0.0759
JUN 22,82	MAY 25,82	0.003	< 0.0001	0.1148
JUL 20,82	JUN 22,82	< 0.002	< 0.0001	0.0832
AUG 17,82	JUL 20,82	0.002	< 0.0001	0.0501
SEP 14,82	AUG 17,82	0.002	< 0.0001	0.0832
OCT 12,82	SEP 14,82	0.001	0.0001	0.1259
NOV 9,82	OCT 12,82	< 0.002	< 0.0001	0.0468

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	1030	945	2	27.3	0	24092	2	1	25		N
MAR 2,82	FEB 2,82	945	945	2	27.4	0	24105	2	1	21		NH
MAR 30,82	MAR 2,82	945	945	4	57.5	0	24110	2	1	12	F	N
APR 27,82	MAR 30,82	945	945	1	10.0	0	22106	2	1	297		NH
MAY 25,82	APR 27,82	945	1600	1	50.0	0	24132	2	1	71		
JUN 22,82	MAY 25,82	1600	945	1	91.0	0	40	2	1	84		
JUL 20,82	JUN 22,82	945	1245	1	59.5	0	24137	2	1	***	AGH	
AUG 17,82	JUL 20,82	1245	1430	1	50.5	0	24149	2	1	90	A	
SEP 14,82	AUG 17,82	1430	930	1	79.8	0	24165	2	1	83	ABC	
OCT 12,82	SEP 14,82	800	1000	1	59.6	0	24174	2	1	76		
NOV 9,82	OCT 12,82	1100	930	1	20.4	0	24185	2	1	19	AJI	N
DEC 7,82	NOV 9,82	930	1130	3	58.0	0	24191	2	1	88	A	
JAN 4,83	DEC 7,82	1130	1630	3	61.0	0	24199	2	1	***	GH	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U 224.0	*****	4.38	******	2.05	0.80	0.59
MAR 2,82	FEB 2,82	U 194.0	12.3	4.82	******	1.25	0.44	0.48
MAR 30,82	MAR 2,82	U 234.0	32.9	4.31	0.0794	3.20	0.74	0.76
APR 27,82	MAR 30,82	966.0	22.7	U 5.72	U 0.0300	4.50	0.75	U 1.36
MAY 25,82	APR 27,82	1167.0	39.1	4.20	0.0772	5.70	0.67	0.99
JUN 22,82	MAY 25,82	2495.0	31.1	4.19	0.0762	3.90	0.46	0.31
JUL 20,82	JUN 22,82	1345.0	44.8	4.10	0.1026	6.00	0.62	0.72
AUG 17,82	JUL 20,82	1477.0	39.3	4.02	0.1022	4.10	0.52	0.39
SEP 14,82	AUG 17,82	2165.0	27.5	4.19	0.0764	3.20	0.38	0.35
OCT 12,82	SEP 14,82	1481.0	43.0	4.02	0.1138	4.80	0.69	U 0.62
NOV 9,82	OCT 12,82	U 131.0	*****	U 7.08	U 0.0346	U 6.75	U 1.46	U 2.00
DEC 7,82	NOV 9,82	1675.0	21.6	4.48	0.0502	2.45	0.45	0.44
JAN 4,83	DEC 7,82	1244.0	17.3	4.45	0.0588	1.40	0.33	0.19

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.76	*****	0.210	0.060	0.580	0.232	*****
MAR 2,82	FEB 2,82	0.24	*****	U 0.190	0.025	0.125	0.204	*****
MAR 30,82	MAR 2,82	0.22	0.56	U 0.275	0.020	0.175	0.346	0.012
APR 27,82	MAR 30,82	0.22	0.63	U 0.460	0.045	0.085	0.490	0.035
MAY 25,82	APR 27,82	0.21	0.63	0.305	0.065	0.085	0.520	0.017
JUN 22,82	MAY 25,82	0.07	0.46	0.115	0.020	0.010	0.360	0.006
JUL 20,82	JUN 22,82	0.13	0.72	0.195	0.115	0.035	0.630	0.009
AUG 17,82	JUL 20,82	0.12	0.50	0.075	0.070	0.015	0.440	0.008
SEP 14,82	AUG 17,82	0.10	0.37	0.085	0.065	0.050	0.320	< 0.003
OCT 12,82	SEP 14,82	0.12	0.46	U 0.195	0.030	0.030	0.400	0.005
NOV 9,82	OCT 12,82	U 0.46	U 2.10	U 0.500	U 0.120	U 0.105	*****	0.016
DEC 7,82	NOV 9,82	0.20	0.48	U 0.195	U 0.110	0.090	0.366	U 0.070
JAN 4,83	DEC 7,82	0.20	0.18	0.055	0.010	0.105	0.130	0.013

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 27,82	MAR 30,82	0.014	< 0.001	0.005	0.128	0.006	< 0.002	0.099
MAY 25,82	APR 27,82	0.009	< 0.001	0.009	0.066	0.009	< 0.002	0.054
JUN 22,82	MAY 25,82	0.002	< 0.001	0.003	0.013	0.006	< 0.002	< 0.007
JUL 20,82	JUN 22,82	0.003	< 0.001	0.005	0.077	0.008	< 0.002	0.029
AUG 17,82	JUL 20,82	0.002	< 0.001	0.009	0.018	0.004	< 0.002	0.015
SEP 14,82	AUG 17,82	0.002	< 0.001	0.003	0.015	0.007	< 0.002	0.009
OCT 12,82	SEP 14,82	0.004	< 0,001	0.007	0.033	0.014	< 0.002	0.023
NOV 9,82	OCT 12,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	0.003	< 0.001	0.005	0.013	0.005	< 0.002	0.010
JAN 4,83	DEC 7,82	0.001	0.001	0.003	0.017	0.007	< 0.002	0.023

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : SMITH'S FALLS/CUMULATIVE PRECIP. #15

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0417
MAR 2,82	FEB 2,82	*****	******	0.0151
MAR 30,82	MAR 2,82	*****	******	0.0490
APR 27,82	MAR 30,82	0.002	0.0001	U 0.0019
MAY 25,82	APR 27,82	< 0.002	0.0002	0.0631
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	0.0646
JUL 20,82	JUN 22,82	< 0.002	0.0002	0.0794
AUG 17,82	JUL 20,82	0.001	< 0.0001	0.0955
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0646
OCT 12,82	SEP 14,82	0.001	0.0001	0.0955
NOV 9,82	OCT 12,82	*****	******	U 0.0001
DEC 7,82	NOV 9,82	< 0.002	< 0.0001	0.0331
JAN 4,83	DEC 7,82	< 0.002	< 0.0001	0.0355

PART VI

NORTHEASTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP. #28 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 9,82	JAN 1,82	1330	1345	2	37.1	9	11185	2	1	***	G	
MAR 7,82	FEB 9,82	1345	1515	4	9.7	9	11187	2	1	11	CD	N
JUN 12,82	MAR 7,82	1515	1603	1	184.8	9	11333	2	1	20	DC	NM
JUL 11,82	JUN 12,82	1603	1330	1	91.0	9	11358	2	1	28	A	N
AUG 15,82	JUL 11,82	1330	1015	1	143.6	9	11360	2	1	27	ADLMO	NCM
OCT 17,82	AUG 15,82	1015	1305	1	137.8	9	11428	2	1	75	FIJM	H
NOV 22,82	OCT 17,82	1305	1330	3	105.3	9	11453	2	1	***	G	NHM
DEC 16,82	NOV 22,82	1330	1335	4	40.4	9	11493	2	1	***	G	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP. #28 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 9,82	JAN 1,82	******	*****	*****	******	*****	*****	*****
MAR 7,82	FEB 9,82	U 36.0	*****	U 7.21	0.0238	*****	*****	*****
JUN 12,82	MAR 7,82	U 1241.0	30.0	U 7.17	0.0186	U 3.85	0.26	U 3.37
JUL 11,82	JUN 12,82	U 833.0	4.4	5.96	0.0304	0.45	0.06	0.20
AUG 15,82	JUL 11,82	U 1275.0	14.8	6.75	0.0360	0.65	<W 0.01	0.09
OCT 17,82	AUG 15,82	3366.0	6.1	5.08	0.0310	0.90	0.06	0.18
NOV 22,82	OCT, 17,82	U 547.0	*****	U 6.82	0.0376	U 3.35	0.43	U 3.38
DEC 16,82	NOV 22,82	U 192.0	*****	*****	******	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP. #28 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 9,82	JAN 1,82	*****	*****	*****	*****	*****	*****	*****
MAR 7,82	FEB 9,82	*****	*****	*****	*****	*****	*****	*****
JUN 12,82	MAR 7,82	0.36	1.48	J 0.660	0.260	0.240	0.640	0.095
JUL 11,82	JUN 12,82	0.12	0.58	0.050	0.160	0.050	0.116	0.054
AUG 15,82	JUL 11,82	0.55	2.60	0.190	0.395	0.310	0.600	0.215
OCT 17,82	AUG 15,82	0.22	0.21	0.050	0.060	0.135	0.120	0.009
NOV 22,82	OCT 17,82	U 1.39	0.73	J 0.500	0.535	U 1.060	0.276	0.026
DEC 16,82	NOV 22,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP. #28

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 9,82	JAN 1,82	*****	*****	*****	*****	*****	*****	*****
MAR 7,82	FEB 9,82	*****	*****	*****	*****	*****	*****	*****
JUN 12,82	MAR 7,82	0.004	< 0.001	0.014	0.121	0.002	< 0.002	0.021
JUL 11,82	JUN 12,82	0.002	< 0.001	0.003	0.024	< 0.001	< 0.002	0.006
AUG 15,82	JUL 11,82	0.003	< 0.001	0.004	0.044	< 0.001	< 0.002	0.015
OCT 17,82	AUG 15,82	< 0.001	< 0.001	< 0.003	0.012	< 0.001	< 0.002	0.010
NOV 22,82	OCT 17,82	0.012	< 0.001	0.038	0.147	0.005	< 0.002	0.100
DEC 16,82	NOV 22,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : ATTAWAPISKAT/CUMULATIVE PRECIP. #28

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ UG/L
FEB 9,82	JAN 1,82	*****	******	******
MAR 7,82	FEB 9,82	*****	******	U 0.0001
JUN 12,82	MAR 7,82	0.003	< 0.0001	U 0.0001
JUL 11,82	JUN 12,82	< 0.002	< 0.0001	0.0011
AUG 15,82	JUL 11,82	< 0.002	< 0.0001	0.0002
OCT 17,82	AUG 15,82	0.001	< 0.0001	0.0083
NOV 22,82	OCT 17,82	0.007	0.0012	U 0.0002
DEC 16,82	NOV 22,82	*****	******	******

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP. #24 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	955	1135	4	34.0	0	11090	2	1	***	CDGH	N
MAR 2,82	FEB 2,82	1135	935	4	23.0	0	11091	2	1	***	GE	
MAR 30,82	MAR 2,82	935	1325	4	28.3	9	11093	2	1	73	CD	
APR 27,82	MAR 30,82	1325	1034	1	40.0	0	38115	2	1	137	CD	N
MAY 25,82	APR 27,82	1009	****	1	28.2	9	11298	2	1	819	ABC	NT
JUN 22,82	MAY 25,82	1013	945	1	41.0	0	11335	2	1	102	AD	TCM
JUL 27,82	JUN 22,82	957	930	1	39.0	0	11336	2	1	81		
AUG 20,82	JUL 27,82	930	1120	1	32.9	9	11378	2	1	84		
SEP 17,82	AUG 20,82	1120	1200	1	127.9	9	11391	2	1	80		
OCT 12,82	SEP 17,82	1200	1153	1	84.6	9	11413	2	1	91		
NOV 9,82	OCT 12,82	1155	1626	4	45.7	0	11437	2	1	96	BC	
DEC 7,82	NOV 9,82	1625	1150	*	64.8	0	11461	2	1	***	G	
JAN 4,83	DEC 7,82	1150	1528	4	59.9	0	11495	2	1	81		HCM

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP. #24 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U 211.0	*****	4.24	******	1.55	0.54	0.20
MAR 2,82	FEB 2,82	******	*****	*****	******	*****	*****	*****
MAR 30,82	MAR 2,82	676.0	33.0	4.22	0.0880	2.40	0.57	0.15
APR 27,82	MAR 30,82	1785.0	34.0	4.10	0.0942	3.30	0.50	0.34
MAY 25,82	APR 27,82	7507.0	64.5	3.81	0.1456	8.00	0.84	0.63
JUN 22,82	MAY 25,82	1371.0	30.8	3.99	0.0842	3.00	0.32	0.11
JUL 27,82	JUN 22,82	1029.0	33.6	4.08	0.1002	3.75	0.32	0.20
AUG 20,82	JUL 27,82	902.0	22.9	4.30	0.0752	2.45	0.24	0.05
SEP 17,82	AUG 20,82	3347.0	6.3	4.87	0.0332	0.60	0.07	0.05
OCT 12,82	SEP 17,82	2524.0	35.4	4.07	0.1078	3.50	0.45	0.12
NOV 9,82	OCT 12,82	1433.0	25.5	4.22	0.0756	3.00	0.33	0.55
DEC 7,82	NOV 9,82	1987.0	25.0	4.25	0.0764	1.80	0.42	0.07
JAN 4,83	DEC 7,82	1579.0	25.2	4.68	0.0432	2.00	0.41	0.12

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP. #24 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.43	*****	0.030	0.130	0.290	0.128	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.10	0.47	0.010	0.030	0.055	0.374	0.004
APR 27,82	MAR 30,82	0.02	*****	0.040	0.060	0.035	0.400	*****
MAY 25,82	APR 27,82	0.21	1.20	0.125	0.095	0.075	0.960	0.047
JUN 22,82	MAY 25,82	<W 0.01	0.33	0.035	0.080	0.020	0.210	0.011
JUL 27,82	JUN 22,82	0.10	0.47	0.040	0.135	0.025	0.342	0.016
AUG 20,82	JUL 27,82	0.05	*****	0.020	0.060	0.015	0.250	*****
SEP 17,82	AUG 20,82	0.03	0.13	<W 0.005	0.005	0.010	0.078	< 0.002
OCT 12,82	SEP 17,82	0.08	0.78	0.025	0.025	0.040	0.348	0.008
NOV 9,82	OCT 12,82	0.07	0.14	0.120	U 0.640	0.035	0.022	U 0.109
DEC 7,82	NOV 9,82	0.13	0.22	0.015	< 0.005	0.050	0.162	< 0.003
JAN 4,83	DEC 7,82	0.13	0.24	0.030	0.035	0.060	0.148	0.014

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP. #24 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.002	< 0.001	0.009	0.053	0.009	< 0.002	0.064
APR 27,82	MAR 30,82	0.009	0.001	0.009	0.290	0.010	< 0.002	0.209
MAY 25,82	APR 27,82	0.007	0.001	0.007	0.055	0.009	0.002	0.050
JUN 22,82	MAY 25,82	0.003	< 0.001	0.005	0.027	0.002	< 0.002	< 0.009
JUL 27,82	JUN 22,82	0.003	0.001	0.011	0.019	0.004	< 0.002	0.010
AUG 20,82	JUL 27,82	0.002	< 0.001	0.004	0.021	0.004	< 0.002	0.011
SEP 17,82	AUG 20,82	0.001	< 0.001	< 0.003	0.006	0.001	< 0.002	0.007
OCT 12,82	SEP 17,82	0.001	< 0.001	0.004	0.012	0.006	< 0.002	0.016
NOV 9,82	OCT 12,82	0.010	0.002	0.009	0.018	< 0.001	< 0.002	0.012
DEC 7,82	NOV 9,82	0.003	< 0.001	0.009	0.036	0.006	< 0.002	0.042
JAN 4,83	DEC 7,82	0.003	< 0.001	0.006	0.092	0.009	< 0.002	0.076

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : BEAR ISLAND/CUMULATIVE PRECIP. #24

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0575
MAR 2,82	FEB 2,82	*****	******	******
MAR 30,82	MAR 2,82	0.003	0.0003	0.0603
APR 27,82	MAR 30,82	0.001	0.0007	0.0794
MAY 25,82	APR 27,82	0.001	0.0002	0.1549
JUN 22,82	MAY 25,82	< 0.002	< 0.0001	0.1023
JUL 27,82	JUN 22,82	0.002	0.0002	0.0832
AUG 20,82	JUL 27,82	< 0.002	< 0.0001	0.0501
SEP 17,82	AUG 20,82	< 0.001	< 0.0001	0.0135
OCT 12,82	SEP 17,82	0.001	< 0.0001	0.0851
NOV 9,82	OCT 12,82	0.001	0.0002	0.0603
DEC 7,82	NOV 9,82	< 0.002	< 0.0001	0.0562
JAN 4,83	DEC 7,82	0.001	0.0002	0.0209

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP. #25 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
MAR 2,82	JAN 7,82	1645	920	4	67.6	9	11138	2	1	***	FGE	
MAR 30,82	MAR 2,82	920	920	4	26.9	9	11140	2	1	27	CD	N
APR 27,82	MAR 30,82	920	1355	1	10.0	0	38113	2	1	***	CDGH	N
MAY 25,82	APR 27,82	1355	1752	1	24.3	9	11310	2	1	92	AD	T
JUN 22,82	MAY 25,82	1752	1230	1	36.0	0	11315	2	1	***	ACDG	
JUL 22,82	JUN 22,82	1230	1605	1	52.0	0	11348	2	1	83		
AUG 17,82	JUL 22,82	1605	750	1	12.0	0	11374	2	1	***	DG	N
SEP 14,82	AUG 17,82	750	750	1	75.0	0	11389	2	1	111	AD	
OCT 13,82	SEP 14,82	750	1715	1	113.9	9	11419	2	1	***	GH	
NOV 9,82	OCT 13,82	1715	1220	4	22.8	0	11441	2	1	***	AF	
DEC 7,82	NOV 9,82	1215	900	4	39.8	0	11469	2	1	***	LOFG	
JAN 4,83	DEC 7,82	930	845	2	49.5	0	11499	2	1	***	G	HM

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP. #25 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. JMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
MAR 2,82	JAN 7,82		******	*****	*****	******	*****	*****	*****
MAR 30,82	MAR 2,82	U	244.0	38.0	4.11	0.1086	2.95	0.42	0.09
APR 27,82	MAR 30,82	U	75.0	*****	4.42	0.0558	1.75	0.25	*****
MAY 25,82	APR 27,82		728.0	41.0	3.97	0.0980	4.80	0.41	0.33
JUN 22,82	MAY 25,82		1144.0	35.9	4.05	0.0942	3.70	0.37	0.17
JUL 22,82	JUN 22,82		1406.0	28.3	4.17	0.0754	2.30	0.35	0.11
AUG 17,82	JUL 22,82		1273.0	26.6	4.24	0.0882	3.60	0.30	0.26
SEP 14,82	AUG 17,82		2723.0	8.9	4.64	0.0372	0.90	0.09	0.04
OCT 13,82	SEP 14,82		2090.0	27.0	4.15	0.0976	2.70	0.30	0.09
NOV 9,82	OCT 13,82		******	*****	*****	******	*****	*****	*****
DEC 7,82	NOV 9,82		******	*****	*****	******	*****	*****	*****
JAN 4,83	DEC 7,82		1602.0	20.0	4.18	0.1112	0.95	0.31	0.07

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP. #25 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
MAR 2,82	JAN 7,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.10	0.39	0.015	0.035	0.085	0.232	0.005
APR 27,82	MAR 30,82	0.04	0.58	*****	*****	*****	*****	0.015
MAY 25,82	APR 27,82	0.10	0.83	0.060	0.050	0.050	0.460	0.018
JUN 22,82	MAY 25,82	<W 0.01	0.39	0.040	0.090	0.030	0.288	0.005
JUL 22,82	JUN 22,82	0.07	0.38	0.035	0.055	< 0.010	0.248	0.012
AUG 17,82	JUL 22,82	0.14	0.75	0.080	0.170	0.070	0.322	0.060
SEP 14,82	AUG 17,82	U 0.20	0.29	<W 0.005	<W 0.005	0.005	0.084	0.006
OCT 13,82	SEP 14,82	0.10	0.40	0.020	0.040	0.070	0.214	< 0.003
NOV 9,82	OCT 13,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.10	0.22	0.015	0.055	0.070	0.078	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP. #25 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
MAR 2,82	JAN 7,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	*****	*****	*****	*****	*****	*****	*****
APR 27,82	MAR 30,82	*****	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82	0.004	0.001	0.007	0.039	0.005	0.002	0.026
JUN 22,82	MAY 25,82	0.004	0.002	0.005	0.016	0.006	< 0.002	0.011
JUL 22,82	JUN 22,82	0.002	< 0.001	0.005	0.012	< 0.001	< 0.002	0.009
AUG 17,82	JUL 22,82	*****	*****	*****	*****	*****	*****	*****
SEP 14,82	AUG 17,82	< 0.001	< 0.001	< 0.003	0.011	< 0.001	< 0.002	0.005
OCT 13,82	SEP 14,82	0.001	< 0.001	0.008	0.027	0.008	< 0.002	0.019
NOV 9,82	OCT 13,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	*****	*****	*****	*****	*****	*****	*****
JAN 4,83	DEC 7,82	0.001	< 0.001	0.005	0.025	0.002	< 0.002	0.026

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : GOWGANDA/CUMULATIVE PRECIP. #25

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM UG/L	FREE H+ UG/L
MAR 2,82	JAN 7,82	*****	******	******
MAR 30,82	MAR 2,82	*****	******	0.0776
APR 27,82	MAR 30,82	*****	******	0.0380
MAY 25,82	APR 27,82	0.002	0.0001	0.1072
JUN 22,82	MAY 25,82	0.001	0.0004	0.0891
JUL 22,82	JUN 22,82	0.002	< 0.0001	0.0676
AUG 17,82	JUL 22,82	*****	******	0.0575
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0229
OCT 13,82	SEP 14,82	0.001	0.0001	0.0708
NOV 9,82	OCT 13,82	*****	******	******
DEC 7,82	NOV 9,82	*****	******	******
JAN 4,83	DEC 7,82	< 0.002	0.0002	0.0661

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP. #23 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	1145	1300	2	41.0	0	11042	2	1	***	CDGH	N
MAR 2,82	FEB 2,82	1300	1340	4	24.0	0	11043	2	1	***	CDGH	N
MAR 30,82	MAR 2,82	1340	1100	4	56.0	0	11045	2	1	75	CD	
APR 27,82	MAR 30,82	1100	1030	1	34.0	0	11047	2	1	***	CDGH	
MAY 31,82	APR 27,82	1030	****	1	30.0	0	11304	2	1	***	G	T
JUN 22,82	MAY 31,82	1035	1315	1	53.0	0	11324	2	1	73		
JUL 27,82	JUN 22,82	1315	1355	1	23.0	0	11354	2	1	64		
AUG 17,82	JUL 27,82	1400	1400	1	32.0	0	11380	2	1	80		
SEP 14,82	AUG 17,82	1400	1100	1	149.0	0	11395	2	1	23	A	N
OCT 12,82	SEP 14,82	1100	1730	1	88.0	0	11415	2	1	78		
NOV 15,82	OCT 12,82	1730	1000	3	103.3	0	11433	2	1	58		T
DEC 14,82	NOV 15,82	1000	1100	4	47.3	0	11471	2	1	65	FL	
JAN 5,83	DEC 14,82	1100	1025	4	75.3	0	11487	2	1	66		

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP. #23 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U 277.0	27.4	4.26	0.0888	1.75	0.58	0.26
MAR 2,82	FEB 2,82	U 107.0	38.1	4.06	******	2.30	0.70	*****
MAR 30,82	MAR 2,82	1370.0	51.0	4.00	0.1244	3.30	0.94	0.18
APR 27,82	MAR 30,82	1090.0	36.0	4.20	0.1012	3.65	0.70	0.36
MAY 31,82	APR 27,82	979.0	87.0	3.68	0.2020	9.95	1.05	0.63
JUN 22,82	MAY 31,82	1260.0	36.6	4.04	0.0954	3.80	0.48	0.11
JUL 27,82	JUN 22,82	481.0	38.9	4.09	0.0960	4.30	0.66	0.48
AUG 17,82	JUL 27,82	840.0	37.9	4.07	0.1154	4.35	0.43	0.11
SEP 14,82	AUG 17,82	U 1148.0	U 19.4	4.29	U 0.0642	U 2.25	0.22	0.11
OCT 12,82	SEP 14,82	2231.0	56.0	3.87	0.1554	5.40	0.96	0.39
NOV 15,82	OCT 12,82	1950.0	25.0	4.18	0.0640	2.40	0.46	0.23
DEC 14,82	NOV 15,82	1013.0	40.6	4.07	0.1096	3.20	U 0.86	0.24
JAN 5,83	DEC 14,82	1634.0	44.0	4.07	0.1206	3.40	U 0.87	0.15

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP. #23 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.38	0.39	0.050	0.090	0.240	0.188	0.017
MAR 2,82	FEB 2,82	0.20	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.19	0.69	0.020	0.035	0.055	0.570	0.002
APR 27,82	MAR 30,82	0.11	0.35	0.040	< 0.015	0.045	0.520	0.016
MAY 31,82	APR 27,82	0.20	1.12	0.125	0.060	0.060	0.940	0.050
JUN 22,82	MAY 31,82	<W 0.01	0.48	0.025	0.035	<W 0.005	0.390	0.005
JUL 27,82	JUN 22,82	0.16	0.68	0.090	0.080	0.025	0.520	0.012
AUG 17,82	JUL 27,82	0.08	*****	0.030	0.085	0.025	0.610	*****
SEP 14,82	AUG 17,82	0.08	0.30	0.015	U 0.070	0.005	U 0.262	< 0.002
OCT 12,82	SEP 14,82	0.19	0.21	0.050	0.055	0.080	0.680	< 0.003
NOV 15,82	OCT 12,82	0.10	0.26	0.035	U 0.300	0.050	0.232	0.004
DEC 14,82	NOV 15,82	0.16	0.55	0.045	0.010	0.065	0.500	0.015
JAN 5,83	DEC 14,82	0.21	0.44	0.040	0.040	< 0.010	0.440	< 0.003

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP. #23 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.003	< 0.001	0.014	0.020	0.010	< 0.002	0.060
APR 27,82	MAR 30,82	0.005	< 0.001	0.009	0.140	0.011	< 0.002	0.138
MAY 31,82	APR 27,82	0.008	0.001	0.008	0.075	0.011	0.002	0.074
JUN 22,82	MAY 31,82	0.002	0.001	0.010	0.008	0.005	< 0.002	< 0.009
JUL 27,82	JUN 22,82	0.004	< 0.001	0.006	0.052	< 0.001	< 0.002	0.042
AUG 17,82	JUL 27,82	0.002	< 0.001	0.009	0.027	0.009	< 0.002	0.012
SEP 14,82	AUG 17,82	0.001	< 0.001	0.003	0.033	0.006	< 0.002	0.030
OCT 12,82	SEP 14,82	0.004	< 0.001	0.006	0.029	0.011	< 0.002	0.027
NOV 15,82	OCT 12,82	0.002	< 0.001	0.005	0.023	0.004	< 0.002	0.015
DEC 14,82	NOV 15,82	0.003	< 0.001	0.009	0.075	0.013	< 0.002	0.056
JAN 5,83	DEC 14,82	0.002	< 0.001	0.009	0.026	0.011	< 0.002	0.025

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : KILLARNEY/CUMULATIVE PRECIP. #23

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0550
MAR 2,82	FEB 2,82	*****	******	0.0871
MAR 30,82	MAR 2,82	0.001	0.0003	0.1000
APR 27,82	MAR 30,82	0.003	< 0.0001	0.0631
MAY 31,82	APR 27,82	0.002	0.0001	0.2089
JUN 22,82	MAY 31,82	0.002	< 0.0001	0.0912
JUL 27,82	JUN 22,82	< 0.003	< 0.0001	0.0813
AUG 17,82	JUL 27,82	< 0.002	< 0.0001	0.0851
SEP 14,82	AUG 17,82	< 0.002	< 0.0001	0.0513
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.1349
NOV 15,82	OCT 12,82	0.001	< 0.0001	0.0661
DEC 14,82	NOV 15,82	0.068	0.0001	0.0851
JAN 5,83	DEC 14,82	< 0.002	0.0001	0.0851

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP. #22 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	1330	1000	2	50.0	0	11065	2	1	12	CFL	N
MAR 2,82	FEB 2,82	1000	1610	4	57.2	9	11067	2	1	38	D	N
MAR 30,82	MAR 2,82	1610	930	4	20.0	0	11069	2	1	***	DGH	
APR 27,82	MAR 30,82	930	1430	1	63.0	0	11071	2	1	74	ACD	
MAY 27,82	APR 27,82	1430	****	1	20.0	0	11302	2	1	99	C	T
JUN 22,82	MAY 27,82	1000	1130	1	103.2	9	11317	2	1	57	AC	
JUL 23,82	JUN 22,82	1130	1000	1	59.0	0	11340	2	1	68		
AUG 17,82	JUL 23,82	1000	1430	1	64.0	0	11372	2	1	79	C	
SEP 14,82	AUG 17,82	1430	1030	1	124.0	0	11387	2	1	81		
OCT 13,82	SEP 14,82	1030	1130	1	84.0	0	11423	2	1	78		
NOV 10,82	OCT 13,82	1130	1010	4	63.4	0	11435	2	1	***	G	N
DEC 8,82	NOV 10,82	1010	800	4	94.3	0	11465	2	1	***	G	NC
JAN 4,83	DEC 8,82	800	1600	4	86.2	0	11489	2	1	***	G	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP. #22 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L		NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82	U	211.0	*****		4.27		******		1.45		0.72		0.42
MAR 2,82	FEB 2,82	U	723.0	22.0		4.33		0.0862		1.00		0.51		0.10
MAR 30,82	MAR 2,82		513.0	25.6		4.30		0.0854		1.45		0.39		0.08
APR 27,82	MAR 30,82		1534.0	45.4		4.11		0.1130		4.75		0.83		0.52
MAY 27,82	APR 27,82		645.0	58.5		3.85		0.1332		6.95		0.80		0.62
JUN 22,82	MAY 27,82		1918.0	31.1		4.07		0.0864		*****		*****		0.16
JUL 23,82	JUN 22,82		1303.0	38.9		4.07		0.1006		4.35		0.46		0.26
AUG 17,82	JUL 23,82		1646.0	21.2		4.30		0.0760		1.95		0.22		0.05
SEP 14,82	AUG 17,82		3287.0	15.6		4.37		0.0550		1.60		0.14		0.06
OCT 13,82	SEP 14,82		2129.0	33.4		4.10		0.1032		3.45		0.66		0.34
NOV 10,82	OCT 13,82	U	404.0	*****		4.46		0.0402		1.30		0.22		0.10
DEC 8,82	NOV 10,82	U	1101.0	21.5	U	5.52	U	0.0186	U	0.20	U	0.02		0.03
JAN 4,83	DEC 8,82		2441.0	21.5		4.38		0.0684		1.60		0.32		0.10

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP. #22 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.83	*****	0.040	0.100	0.600	0.090	*****
MAR 2,82	FEB 2,82	0.26	0.18	0.015	0.015	0.215	0.122	0.006
MAR 30,82	MAR 2,82	0.16	0.17	0.010	0.035	0.105	0.118	0.002
APR 27,82	MAR 30,82	0.25	0.36	0.055	0.065	0.090	0.650	0.017
MAY 27,82	APR 27,82	0.20	1.03	0.115	0.100	0.070	0.730	0.055
JUN 22,82	MAY 27,82	*****	0.42	0.030	0.045	<W 0.005	0.328	0.006
JUL 23,82	JUN 22,82	0.11	0.52	0.050	0.020	0.030	0.410	0.006
AUG 17,82	JUL 23,82	0.03	0.27	0.010	0.030	0.015	0.150	0.008
SEP 14,82	AUG 17,82	U 0.35	U 0.15	<W 0.005	<W 0.005	0.010	U 0.112	< 0.002
OCT 13,82	SEP 14,82	0.14	0.46	0.055	0.040	0.050	0.450	0.007
NOV 10,82	OCT 13,82	0.06	0.23	0.015	0.020	0.040	0.124	0.007
DEC 8,82	NOV 10,82	0.10	U 0.07	0.010	<W 0.005	0.080	U 0.020	0.008
JAN 4,83	DEC 8,82	0.13	0.18	0.020	0.025	0.055	0.132	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP. #22 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	0.003	0.001	< 0.005	0.030	0.006	< 0.002	0.033
MAR 30,82	MAR 2,82	0.004	< 0.001	0.008	0.055	0.004	< 0.002	0.041
APR 27,82	MAR 30,82	0.008	< 0.001	0.009	0.100	0.010	< 0.002	0.107
MAY 27,82	APR 27,82	0.008	0.001	U 0.029	0.103	0.010	0.002	0.063
JUN 22,82	MAY 27,82	0.002	< 0.001	0.005	0.019	0.004	< 0.002	0.013
JUL 23,82	JUN 22,82	0.004	< 0.001	0.007	0.096	0.005	< 0.002	0.052
AUG 17,82	JUL 23,82	0.002	< 0.001	0.004	0.038	0.004	< 0.002	0.033
SEP 14,82	AUG 17,82	0.001	< 0.001	< 0.003	0.021	0.002	< 0.002	0.014
OCT 13,82	SEP 14,82	0.002	< 0.001	0.004	0.030	0.010	< 0.002	0.019
NOV 10,82	OCT 13,82	0.004	0.003	0.005	U 0.196	0.004	< 0.002	U 0.101
DEC 8,82	NOV 10,82	0.004	< 0.001	0.004	U 0.062	0.006	< 0.002	U 0.336
JAN 4,83	DEC 8,82	0.002	< 0.001	0.003	0.084	0.002	< 0.002	0.062

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MATTAWA/CUMULATIVE PRECIP. #22

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0537
MAR 2,82	FEB 2,82	0.005	0.0004	0.0468
MAR 30,82	MAR 2,82	< 0.003	< 0.0001	0.0501
APR 27,82	MAR 30,82	0.004	0.0002	0.0776
MAY 27,82	APR 27,82	U 0.020	0.0001	0.1413
JUN 22,82	MAY 27,82	0.001	< 0.0001	0.0851
JUL 23,82	JUN 22,82	0.002	< 0.0001	0.0851
AUG 17,82	JUL 23,82	< 0.002	< 0.0001	0.0501
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0427
OCT 13,82	SEP 14,82	0.001	< 0.0001	0.0794
NOV 10,82	OCT 13,82	0.002	< 0.0001	0.0347
DEC 8,82	NOV 10,82	0.003	< 0.0001	U 0.0030
JAN 4,83	DEC 8,82	0.001	< 0.0001	0.0417

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP. #21 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	800	800	4	46.0	0	11018	2	1	***	DGH	N
MAR 2,82	FEB 2,82	800	930	4	25.0	0	11019	2	1	***	CDGH	
MAR 30,82	MAR 2,82	940	1530	4	46.0	0	11021	2	1	80	CD	
APR 27,82	MAR 30,82	1530	1330	1	75.0	0	11023	2	1	***	ACDGH	
MAY 25,82	APR 27,82	1330	****	1	24.5	9	11311	2	1	***	ADG	T
JUN 24,82	MAY 25,82	1600	1115	1	89.0	0	11314	2	1	68	AC	
JUL 20,82	JUN 24,82	1115	1630	1	36.0	0	11352	2	1	66		HM
AUG 17,82	JUL 20,82	1630	1200	1	22.0	9	11376	2	1	***	ADG	X
SEP 14,82	AUG 17,82	900	1000	1	162.0	0	11393	2	1	74	ADC	
OCT 12,82	SEP 14,82	1000	900	1	105.0	0	11411	2	1	87		
NOV 9,82	OCT 12,82	900	830	1	85.6	9	11431	2	1	***	DG	
DEC 7,82	NOV 9,82	830	1100	4	128.0	9	11472	2	1	87		
JAN 4,83	DEC 7,82	1100	800	4	89.8	0	11485	2	1	***	G	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP. #21 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L		CALCIUM MG/L
FEB 2,82	JAN 5,82	U	197.0	*****	4.48	******		0.55	0.32		0.09
MAR 2,82	FEB 2,82		566.0	15.3	4.48	0.0642		0.70	0.34		0.08
MAR 30,82	MAR 2,82		1202.0	45.8	4.03	0.1320		3.15	0.84		0.23
APR 27,82	MAR 30,82		2446.0	38.7	4.17	0.1106		4.15	0.76		0.46
MAY 25,82	APR 27,82		414.0	79.5	3.77	0.1632	U	11.50	1.18	U	1.48
JUN 24,82	MAY 25,82		1990.0	36.5	4.06	0.0938		3.65	0.53		0.11
JUL 20,82	JUN 24,82		780.0	55.0	3.90	0.1358	U	0.85	0.79		0.45
AUG 17,82	JUL 20,82		******	*****	*****	******		*****	*****		*****
SEP 14,82	AUG 17,82		3937.0	30.0	4.11	0.0870		3.15	0.37		0.11
OCT 12,82	SEP 14,82		2990.0	38.1	4.03	0.1152		3.90	0.52		0.20
NOV 9,82	OCT 12,82	A	2200.0	18.4	4.57	0.0470		2.00	0.34	U	0.32
DEC 7,82	NOV 9,82		3654.0	27.6	4.23	0.0956		2.15	0.44		0.10
JAN 4,83	DEC 7,82		2243.0	26.0	4.31	0.0688		2.05	0.57		0.29

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP. #21 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.64	*****	0.010	0.070	0.270	0.156	*****
MAR 2,82	FEB 2,82	0.28	0.23	0.015	0.030	0.175	0.082	0.007
MAR 30,82	MAR 2,82	0.25	0.72	0.035	0.030	0.140	0.470	0.010
APR 27,82	MAR 30,82	0.20	0.59	0.045	0.055	0.055	0.550	0.008
MAY 25,82	APR 27,82	U 0.29	U 1.63	U 0.300	0.150	U 0.125	U 1.280	U 0.050
JUN 24,82	MAY 25,82	0.04	0.84	0.030	0.100	0.025	0.520	U 0.052
JUL 20,82	JUN 24,82	0.19	0.85	U 0.095	0.075	0.035	0.660	U 0.017
AUG 17,82	JUL 20,82	*****	*****	*****	*****	*****	*****	*****
SEP 14,82	AUG 17,82	0.10	0.35	0.015	<W 0.005	0.010	0.336	< 0.002
OCT 12,82	SEP 14,82	0.13	0.52	0.035	0.050	0.075	0.430	0.005
NOV 9,82	OCT 12,82	U 0.69	U 0.46	0.040	U 0.270	U 0.450	0.220	0.008
DEC 7,82	NOV 9,82	0.17	0.26	0.005	<W 0.005	0.090	0.226	< 0.002
JAN 4,83	DEC 7,82	0.38	0.38	0.075	0.035	0.075	0.302	0.016

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP. #21 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	0.002	< 0.001	< 0.006	0.070	0.008	< 0.002	0.048
MAR 30,82	MAR 2,82	0.002	< 0.001	0.008	0.040	0.008	< 0.002	0.061
APR 27,82	MAR 30,82	0.006	< 0.001	0.006	0.051	0.015	< 0.002	0.053
MAY 25,82	APR 27,82	0.021	0.001	0.013	0.130	0.014	0.002	0.116
JUN 24,82	MAY 25,82	0.003	0.001	0.004	0.027	0.004	< 0.002	< 0.008
JUL 20,82	JUN 24,82	0.006	< 0.001	0.010	0.087	0.002	< 0.002	0.062
AUG 17,82	JUL 20,82	*****	*****	*****	*****	*****	*****	*****
SEP 14,82	AUG 17,82	0.001	< 0.001	0.003	0.014	0.007	< 0.002	0.007
OCT 12,82	SEP 14,82	0.002	< 0.001	0.004	0.015	0.004	< 0.002	0.012
NOV 9,82	OCT 12,82	0.001	< 0.001	0.009	0.057	0.005	< 0.002	0.018
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.003	0.011	< 0.001	< 0.002	0.010
JAN 4,83	DEC 7,82	0.003	< 0.001	0.007	0.060	0.012	< 0.002	0.048

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MCKELLAR/CUMULATIVE PRECIP. #21

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0331
MAR 2,82	FEB 2,82	0.003	0.0002	0.0331
MAR 30,82	MAR 2,82	0.002	0.0001	0.0933
APR 27,82	MAR 30,82	0.002	0.0001	0.0676
MAY 25,82	APR 27,82	0.005	0.0001	0.1698
JUN 24,82	MAY 25,82	0.001	< 0.0001	0.0871
JUL 20,82	JUN 24,82	0.002	< 0.0001	0.1259
AUG 17,82	JUL 20,82	*****	******	******
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0776
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.0933
NOV 9,82	OCT 12,82	0.001	0.0001	0.0269
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0589
JAN 4,83	DEC 7,82	< 0.001	0.0002	0.0490

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP. #27 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	930	830	4	19.0	0	11162	2	1	37	CD	N
MAR 2,82	FEB 2,82	830	820	4	26.8	9	11164	2	1	***	GHE	
MAR 30,82	MAR 2,82	820	745	4	25.0	0	11166	2	1	76	CD	
APR 27,82	MAR 30,82	745	910	1	45.0	0	11258	2	1	95	CD	
MAY 24,82	APR 27,82	915	****	1	27.0	9	11296	2	1	44	ADC	NT
JUN 22,82	MAY 24,82	2110	900	1	40.0	0	11322	2	1	84	AD	
JUL 22,82	JUN 22,82	900	1015	1	122.0	0	11342	2	1	69		
AUG 17,82	JUL 22,82	1015	1000	1	94.0	0	11370	2	1	82	DA	
SEP 14,82	AUG 17,82	1000	900	1	71.0	0	11385	2	1	81	A	
OCT 12,82	SEP 14,82	830	915	1	110.0	0	11421	2	1	76		
NOV 9,82	OCT 12,82	915	1500	3	103.4	0	11443	2	1	***	GMO	
DEC 7,82	NOV 9,82	1500	830	4	48.6	0	11477	2	1	***	G	
JAN 6,83	DEC 7,82	830	1000	2	33.8	0	11501	2	1	48		N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP. #27

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U	232.0	20.2		4.46	******		1.15	0.42	0.45
MAR 2,82	FEB 2,82		******	*****		*****	******		*****	*****	*****
MAR 30,82	MAR 2,82		622.0	21.7		4.43	0.0554		1.45	0.38	0.20
APR 27,82	MAR 30,82		1402.0	21.2		4.58	0.0542		2.70	0.34	0.43
MAY 24,82	APR 27,82	U	392.0	57.0		3.89	0.1262		8.10	0.73	0.86
JUN 22,82	MAY 24,82		1091.0	19.4		4.35	0.0566		1.90	0.18	0.11
JUL 22,82	JUN 22,82		2736.0	17.9		4.36	0.0528		2.00	0.15	0.07
AUG 17,82	JUL 22,82		2527.0	10.4	U	4.66	0.0430	U	0.95	0.08	0.06
SEP 14,82	AUG 17,82		1874.0	8.3		4.76	0.0358		0.90	0.11	0.13
OCT 12,82	SEP 14,82		2731.0	14.7		4.52	0.0642		1.85	0.17	0.10
NOV 9,82	OCT 12,82	A	2100.0	10.0		4.94	0.0302		1.40	0.20	0.26
DEC 7,82	NOV 9,82		1155.0	12.6		4.58	0.0482		0.95	0.18	0.06
JAN 6,83	DEC 7,82	U	535.0	17.0		4.36	0.0612		1.00	0.36	0.09

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP. #27

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.36	*****	0.085	0.050	0.195	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.05	0.21	0.040	0.015	0.035	0.146	0.002
APR 27,82	MAR 30,82	0.04	0.42	0.070	< 0.010	0.040	0.366	0.005
MAY 24,82	APR 27,82	0.16	1.17	0.145	0.070	0.065	0.990	0.024
JUN 22,82	MAY 24,82	<W 0.01	0.23	0.025	0.050	<W 0.005	0.138	0.008
JUL 22,82	JUN 22,82	0.03	0.22	0.025	0.035	0.025	0.148	0.003
AUG 17,82	JUL 22,82	< 0.02	0.15	0.020	0.020	< 0.010	0.070	0.006
SEP 14,82	AUG 17,82	0.07	0.21	0.025	0.025	0.015	0.120	0.005
OCT 12,82	SEP 14,82	0.06	0.46	0.015	0.035	0.065	0.340	0.004
NOV 9,82	OCT 12,82	0.07	0.31	0.035	0.050	0.045	0.226	0.006
DEC 7,82	NOV 9,82	0.09	0.17	0.005	<W 0.005	0.055	0.078	< 0.002
JAN 6,83	DEC 7,82	0.08	0.15	0.020	0.020	0.045	*****	0.007

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP. #27 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.002	< 0.001	0.006	0.030	0.004	< 0.002	0.040
APR 27,82	MAR 30,82	0.004	< 0.001	0.005	0.048	0.012	< 0.002	0.057
MAY 24,82	APR 27,82	0.009	0.001	0.025	0.100	0.010	0.002	0.090
JUN 22,82	MAY 24,82	0.002	< 0.001	0.005	0.007	0.002	< 0.002	< 0.010
JUL 22,82	JUN 22,82	< 0.001	< 0.001	< 0.003	0.013	< 0.001	< 0.002	0.008
AUG 17,82	JUL 22,82	0.001	< 0.001	0.002	0.014	0.001	< 0.002	0.008
SEP 14,82	AUG 17,82	0.002	< 0.001	< 0.003	0.023	< 0.001	< 0.002	0.018
OCT 12,82	SEP 14,82	0.001	< 0.001	0.004	0.010	0.007	< 0.002	0.014
NOV 9,82	OCT 12,82	0.002	< 0.001	0.024	U 0.114	0.007	< 0.002	U 0.069
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.006	0.006	< 0.001	< 0.002	< 0.009
JAN 6,83	DEC 7,82	< 0.001	< 0.001	J 0.222	0.102	0.001	< 0.002	0.034

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : MOONBEAM/CUMULATIVE PRECIP. #27

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	*****	******	0.0347
MAR 2,82	FEB 2,82	*****	******	******
MAR 30,82	MAR 2,82	0.002	< 0.0001	0.0372
APR 27,82	MAR 30,82	0.002	0.0003	0.0263
MAY 24,82	APR 27,82	0.004	0.0002	0.1288
JUN 22,82	MAY 24,82	0.001	< 0.0001	0.0447
JUL 22,82	JUN 22,82	0.001	< 0.0001	0.0437
AUG 17,82	JUL 22,82	< 0.001	< 0.0001	U 0.0219
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0174
OCT 12,82	SEP 14,82	0.001	0.0001	0.0302
NOV 9,82	OCT 12,82	0.004	0.0008	0.0115
DEC 7,82	NOV 9,82	0.002	< 0.0001	0.0263
JAN 6,83	DEC 7,82	0.010	0.0002	0.0437

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP. #26 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	1230	1150	3	19.0	0	11113	2	1	89	CD	
MAR 3,82	FEB 2,82	1150	1200	4	15.0	0	11115	2	1	67		
MAR 31,82	MAR 3,82	1200	930	4	27.0	0	11117	2	1	83	CD	
APR 28,82	MAR 31,82	930	1400	1	55.0	0	11119	2	1	70	ACD	
MAY 25,82	APR 28,82	****	****	*	30.8	9	11308	2	1	631		N
JUN 22,82	MAY 25,82	1100	1130	1	57.3	9	11320	2	1	86	A	
JUL 21,82	JUN 22,82	1220	1130	1	66.0	0	11350	2	1	73		
AUG 17,82	JUL 21,82	1220	930	1	12.0	0	11368	2	1	61	A	
SEP 14,82	AUG 17,82	930	950	1	96.0	0	11383	2	1	90	AD	
OCT 14,82	SEP 14,82	950	1200	1	93.0	0	11417	2	1	116		
NOV 11,82	OCT 14,82	1200	1100	1	66.9	0	11439	2	1	84		
DEC 7,82	NOV 11,82	1100	930	*	47.6	0	11475	2	1	***	AG	N
JAN 11,83	DEC 7,82	930	1130	4	100.4	0	11497	2	1	***	GLF	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP. #26 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		552.0	24.5	4.29	0.0906	1.15	0.54	0.14
MAR 3,82	FEB 2,82		329.0	31.4	4.15	0.1104	2.25	0.49	0.10
MAR 31,82	MAR 3,82		736.0	27.3	4.24	0.0812	1.95	0.39	0.09
APR 28,82	MAR 31,82		1257.0	24.6	4.31	0.0862	2.80	0.39	0.24
MAY 25,82	APR 28,82		6312.0	66.5	3.81	0.1598	9.25	0.96	0.66
JUN 22,82	MAY 25,82		1600.0	17.5	4.39	0.0500	1.75	0.26	0.12
JUL 21,82	JUN 22,82		1569.0	26.8	4.20	0.0754	2.60	0.31	0.13
AUG 17,82	JUL 21,82		239.0	22.0	4.31	0.0830	2.65	0.35	0.12
SEP 14,82	AUG 17,82		2829.0	4.9	4.93	0.0308	0.45	0.04	0.03
OCT 14,82	SEP 14,82		3505.0	20.0	4.29	0.0730	1.95	0.23	0.08
NOV 11,82	OCT 14,82		1844.0	19.5	4.32	0.0562	1.80	0.31	0.13
DEC 7,82	NOV 11,82	U	591.0	*****	4.43	0.0590	1.45	0.26	0.05
JAN 11,83	DEC 7,82	U	1487.0	15.6	4.51	0.0544	0.95	0.27	0.06

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP. #26 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.31	0.18	0.040	0.060	0.180	0.050	0.010
MAR 3,82	FEB 2,82	0.09	*****	0.020	0.020	0.055	*****	*****
MAR 31,82	MAR 3,82	0.05	0.33	0.015	0.015	0.040	0.216	0.008
APR 28,82	MAR 31,82	0.08	0.40	0.030	< 0.015	0.035	0.338	0.008
MAY 25,82	APR 28,82	0.22	1.35	0.140	0.135	0.075	0.980	0.063
JUN 22,82	MAY 25,82	<W 0.01	0.36	0.030	0.045	<W 0.005	0.240	0.015
JUL 21,82	JUN 22,82	0.06	0.30	0.035	0.040	0.025	0.202	0.005
AUG 17,82	JUL 21,82	0.13	0.67	0.045	0.150	0.050	0.400	0.016
SEP 14,82	AUG 17,82	0.04	0.12	0.005	0.015	0.010	0.060	0.004
OCT 14,82	SEP 14,82	0.08	0.28	0.015	0.040	0.075	0.190	< 0.003
NOV 11,82	OCT 14,82	0.04	0.24	0.020	0.030	0.015	0.196	< 0.002
DEC 7,82	NOV 11,82	0.08	0.18	0.005	<W 0.005	0.030	0.092	0.008
JAN 11,83	DEC 7,82	0.30	0.17	0.010	0.060	U 0.200	0.098	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP. #26 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.006	< 0.001	0.032	0.076	0.004	< 0.002	0.045
MAR 3,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 31,82	MAR 3,82	0.006	< 0.001	0.009	0.054	0.004	< 0.002	0.057
APR 28,82	MAR 31,82	0.003	< 0.001	0.005	0.047	0.005	< 0.002	0.052
MAY 25,82	APR 28,82	0.010	0.002	U 0.498	0.082	U 0.045	0.002	0.073
JUN 22,82	MAY 25,82	0.002	< 0.001	0.003	0.012	0.003	< 0.002	0.008
JUL 21,82	JUN 22,82	0.002	< 0.001	0.003	0.028	< 0.001	< 0.002	0.028
AUG 17,82	JUL 21,82	0.008	0.001	0.019	U 0.270	0.006	< 0.002	U 0.178
SEP 14,82	AUG 17,82	< 0.001	< 0.001	< 0.003	0.005	< 0.001	< 0.002	< 0.007
OCT 14,82	SEP 14,82	0.001	< 0.001	0.003	0.014	0.003	< 0.002	0.047
NOV 11,82	OCT 14,82	0.001	< 0.001	0.003	0.021	0.001	< 0.002	0.008
DEC 7,82	NOV 11,82	0.001	< 0.001	0.006	0.055	0.001	< 0.002	0.043
JAN 11,83	DEC 7,82	< 0.001	< 0.001	0.004	0.019	0.002	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : RAMSEY/CUMULATIVE PRECIP. #26

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.002	< 0.0001	0.0513
MAR 3,82	FEB 2,82	*****	******	0.0708
MAR 31,82	MAR 3,82	0.002	< 0.0001	0.0575
APR 28,82	MAR 31,82	0.002	0.0003	0.0490
MAY 25,82	APR 28,82	U 0.572	0.0001	0.1549
JUN 22,82	MAY 25,82	< 0.002	< 0.0001	0.0407
JUL 21,82	JUN 22,82	0.001	< 0.0001	0.0631
AUG 17,82	JUL 21,82	0.004	0.0002	0.0490
SEP 14,82	AUG 17,82	< 0.001	< 0.0001	0.0117
OCT 14,82	SEP 14,82	0.001	< 0.0001	0.0513
NOV 11,82	OCT 14,82	< 0.002	< 0.0001	0.0479
DEC 7,82	NOV 11,82	< 0.003	< 0.0001	0.0372
JAN 11,83	DEC 7,82	< 0.002	0.0003	0.0309

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP. #19 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	940	900	2	36.0	0	29055	2	1	60		
MAR 2,82	FEB 2,82	910	900	2	58.0	0	29069	2	1	***	G	N
MAR 30,82	MAR 2,82	900	900	2	34.0	0	29077	2	1	***	G	N
APR 27,82	MAR 30,82	900	1000	1	59.0	0	29085	2	1	80		
MAY 25,82	APR 27,82	900	900	1	38.0	0	29093	2	1	74	AC	
JUN 22,82	MAY 25,82	800	900	1	127.0	0	29097	2	1	83		
JUL 20,82	JUN 22,82	800	950	1	58.0	0	29105	2	1	87	ABLF	
AUG 17,82	JUL 20,82	850	850	1	35.0	0	29111	2	1	31	FI	N
AUG 31,82	AUG 17,82	850	1800	1	31.0	0	29121	2	1	13	FI	N
SEP 14,82	AUG 31,82	1800	845	1	56.0	0	29128	2	1	43	FI	N
OCT 13,82	SEP 14,82	845	1315	1	76.0	0	29133	2	1	25	F	N
NOV 9,82	OCT 13,82	1315	900	3	80.0	0	29143	2	1	89	FJ	
DEC 7,82	NOV 9,82	900	1600	3	118.0	0	29153	2	1	83	C	
JAN 4,83	DEC 7,82	1600	910	4	75.0	0	29163	2	1	***	G	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP. #19 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		705.0	16.2	4.40	0.0692	0.80	0.36	0.12
MAR 2,82	FEB 2,82	U	817.0	10.8	4.62	0.0522	0.35	0.25	0.04
MAR 30,82	MAR 2,82		1391.0	31.1	4.20	0.0928	1.90	0.48	0.12
APR 27,82	MAR 30,82		1549.0	39.5	4.16	0.0948	3.70	0.68	0.36
MAY 25,82	APR 27,82		921.0	38.9	4.18	0.1060	4.65	0.49	0.43
JUN 22,82	MAY 25,82		3445.0	37.8	4.10	0.0990	3.60	0.42	0.13
JUL 20,82	JUN 22,82		1645.0	29.0	4.18	0.0842	3.35	0.28	0.21
AUG 17,82	JUL 20,82	U	360.0	23.8	4.35	0.0658	2.55	0.41	0.28
AUG 31,82	AUG 17,82	U	135.0	37.0	3.97	0.1078	4.45	0.62	*****
SEP 14,82	AUG 31,82	U	785.0	12.2	4.47	0.0468	1.15	0.15	0.07
OCT 13,82	SEP 14,82	U	630.0	41.5	4.01	0.1160	4.15	0.56	0.25
NOV 9,82	OCT 13,82		2320.0	13.5	4.54	0.0532	1.05	0.21	0.05
DEC 7,82	NOV 9,82		3210.0	23.2	4.37	0.0684	1.75	0.34	0.08
JAN 4,83	DEC 7,82		1540.0	10.2	4.75	0.0410	0.70	0.16	<W 0.01

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP. #19 PAGE : 3

REMOVAL DATE	EXPOSURE DATE		CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82		0.14	0.30	< 0.005	0.010	0.040	0.040	0.020
MAR 2,82	FEB 2,82		0.10	0.15	< 0.005	< 0.005	0.025	0.074	0.013
MAR 30,82	MAR 2,82		0.11	0.28	0.015	0.010	0.030	0.218	0.008
APR 27,82	MAR 30,82		0.16	0.78	0.040	0.040	0.040	0.450	0.033
MAY 25,82	APR 27,82		0.08	0.63	0.070	0.075	0.025	0.450	0.028
JUN 22,82	MAY 25,82	<W	0.01	0.40	0.025	0.035	0.015	0.308	0.006
JUL 20,82	JUN 22,82		0.04	0.50	0.035	0.070	< 0.005	0.410	0.006
AUG 17,82	JUL 20,82		0.08	0.60	0.050	0.100	< 0.010	0.520	0.006
AUG 31,82	AUG 17,82		0.13	*****	*****	*****	*****	0.600	*****
SEP 14,82	AUG 31,82		0.08	0.20	0.005	<W 0.005	< 0.005	0.148	0.004
OCT 13,82	SEP 14,82		0.07	0.46	0.040	0.015	0.030	0.440	U 0.090
NOV 9,82	OCT 13,82		0.08	0.20	0.010	0.010	0.010	0.078	0.004
DEC 7,82	NOV 9,82		0.14	0.26	0.010	0.020	0.060	0.158	0.008
JAN 4,83	DEC 7,82		0.09	0.16	0.015	0.025	0.050	0.084	< 0.002

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP. #19 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE	NICKEL	ZINC	IRON	LEAD	VANADIUM	ALUMINUM
		MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
FEB 2,82	JAN 5,82	0.002	< 0.001	< 0.005	0.030	0.002	< 0.002	0.023
MAR 2,82	FEB 2,82	< 0.001	< 0.001	< 0.004	0.014	0.010	< 0.002	< 0.011
MAR 30,82	MAR 2,82	0.001	< 0.001	0.003	0.020	0.001	< 0.002	0.022
APR 27,82	MAR 30,82	0.005	0.001	0.005	0.049	0.006	0.002	0.067
MAY 25,82	APR 27,82	0.005	< 0.001	0.007	0.055	0.007	< 0.002	0.038
JUN 22,82	MAY 25,82	0.001	< 0.001	0.004	0.011	0.004	< 0.002	0.014
JUL 20,82	JUN 22,82	0.003	< 0.001	0.011	0.027	0.004	< 0.002	0.029
AUG 17,82	JUL 20,82	0.005	< 0.001	0.007	0.028	0.001	< 0.002	0.016
AUG 31,82	AUG 17,82	*****	*****	*****	*****	*****	*****	*****
SEP 14,82	AUG 31,82	< 0.001	< 0.001	< 0.005	0.013	0.005	< 0.002	< 0.011
OCT 13,82	SEP 14,82	0.002	< 0.001	0.007	0.035	0.013	0.003	0.015
NOV 9,82	OCT 13,82	< 0.001	< 0.001	< 0.003	0.004	< 0.001	< 0.002	< 0.007
DEC 7,82	NOV 9,82	< 0.001	< 0.001	0.002	0.008	0.005	< 0.002	0.005
JAN 4,83	DEC 7,82	< 0.001	< 0.001	0.005	0.016	0.002	< 0.002	0.017

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WHITNEY/CUMULATIVE PRECIP. #19

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.039	< 0.0001	0.0398
MAR 2,82	FEB 2,82	< 0.002	< 0.0001	0.0240
MAR 30,82	MAR 2,82	0.001	< 0.0001	0.0631
APR 27,82	MAR 30,82	0.007	0.0002	0.0692
MAY 25,82	APR 27,82	0.003	< 0.0001	0.0661
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	0.0794
JUL 20,82	JUN 22,82	0.002	< 0.0001	0.0661
AUG 17,82	JUL 20,82	< 0.004	< 0.0001	0.0447
AUG 31,82	AUG 17,82	*****	******	0.1072
SEP 14,82	AUG 31,82	< 0.002	< 0.0001	0.0339
OCT 13,82	SEP 14,82	< 0.003	< 0.0001	0.0977
NOV 9,82	OCT 13,82	< 0.001	< 0.0001	0.0288
DEC 7,82	NOV 9,82	< 0.001	< 0.0001	0.0427
JAN 4,83	DEC 7,82	< 0.002	0.0014	0.0178

PART VII

NORTHWESTERN REGION

CUMULATIVE PRECIPITATION CHEMISTRY LISTINGS

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP. #31 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	915	2	39.8	0	13017	2	1	49	CD	NM
MAR 2,82	FEB 2,82	915	915	2	9.7	0	13019	2	1	68	C	
MAR 30,82	MAR 2,82	915	1015	1	42.0	0	13021	2	1	87	C	
APR 27,82	MAR 30,82	1015	****	1	58.1	0	13023	2	1	78	ACDF	
MAY 25,82	APR 27,82	900	****	*	69.6	0	13025	2	1	88	DF	
JUN 22,82	MAY 25,82	915	915	1	61.0	0	13027	2	1	81	CD	
JUL 20,82	JUN 22,82	915	915	1	96.0	0	13029	2	1	94	C	
AUG 17,82	JUL 20,82	915	915	1	46.0	0	13031	2	1	18	D	NHM
SEP 14,82	AUG 17,82	915	915	1	75.0	0	13033	2	1	92	C	
OCT 7,82	SEP 14,82	915	1400	1	103.0	0	13035	2	1	88	D	
OCT 12,82	OCT 7,82	1400	915	1	68.9	0	13036	2	1	89	A	
NOV 9,82	OCT 12,82	915	900	*	48.3	0	13038	2	1	78	ACDFI	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP. #31 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L		SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U	639.0	10.7	4.65	0.0526		0.75	0.27	0.05
MAR 2,82	FEB 2,82		216.0	*****	4.11	******		3.10	0.64	0.25
MAR 30,82	MAR 2,82		1190.0	U 35.2	4.25	U 0.0976	U	3.70	0.47	0.13
APR 27,82	MAR 30,82		1488.0	19.9	4.68	0.0478		2.60	0.40	0.41
MAY 25,82	APR 27,82		1993.0	28.6	4.23	0.0628		4.00	0.41	0.34
JUN 22,82	MAY 25,82		1622.0	8.4	4.72	0.0360		0.95	0.15	0.07
JUL 20,82	JUN 22,82		2948.0	10.1	4.80	0.0308		0.90	0.18	0.13
AUG 17,82	JUL 20,82	U	272.0	7.5	5.14	0.0326		0.65	0.17	0.16
SEP 14,82	AUG 17,82		2250.0	10.7	4.60	0.0434		1.25	0.17	0.12
OCT 7,82	SEP 14,82		2951.0	20.3	4.39	0.0722		2.65	0.29	0.38
OCT 12,82	OCT 7,82		1995.0	16.5	4.44	0.0692		1.80	0.17	0.06
NOV 9,82	OCT 12,82		1233.0	10.2	4.74	0.0370		1.10	0.22	0.12

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP. #31

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.16	0.08	0.025	0.040	0.090	< 0.002	0.002
MAR 2,82	FEB 2,82	0.14	*****	0.045	0.025	0.070	0.500	*****
MAR 30,82	MAR 2,82	0.08	0.85	0.020	0.020	0.040	0.650	0.007
APR 27,82	MAR 30,82	0.11	0.85	0.050	0.020	0.050	0.510	0.013
MAY 25,82	APR 27,82	0.08	1.12	0.065	0.080	0.070	0.710	0.076
JUN 22,82	MAY 25,82	<W 0.01	0.25	0.020	0.040	0.020	0.124	0.007
JUL 20,82	JUN 22,82	0.03	0.23	0.030	0.045	0.025	0.184	0.002
AUG 17,82	JUL 20,82	0.03	0.51	0.035	0.055	0.025	0.264	0.014
SEP 14,82	AUG 17,82	0.06	0.29	0.005	< 0.010	0.015	0.234	0.004
OCT 7,82	SEP 14,82	0.04	0.40	0.035	0.035	0.050	0.370	0.005
OCT 12,82	OCT 7,82	<W 0.01	0.34	<W 0.005	0.010	0.010	0.248	< 0.003
NOV 9,82	OCT 12,82	0.02	0.67	0.015	0.070	0.100	0.248	0.010

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP% #31 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.002	< 0.001	0.007	0.032	< 0.001	< 0.002	0.025
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.002	0.001	0.010	0.009	0.006	< 0.002	< 0.009
APR 27,82	MAR 30,82	0.004	0.001	0.005	0.064	0.002	0.002	0.055
MAY 25,82	APR 27,82	0.002	0.001	0.003	0.039	0.002	0.002	0.031
JUN 22,82	MAY 25,82	0.002	< 0.001	0.004	0.015	< 0.001	< 0.002	< 0.008
JUL 20,82	JUN 22,82	0.002	< 0.001	< 0.003	0.016	< 0.001	< 0.002	0.026
AUG 17,82	JUL 20,82	0.009	U 0.011	0.010	U 0.389	U 0.012	< 0.002	U 0.428
SEP 14,82	AUG 17,82	< 0.001	< 0.001	< 0.003	0.009	< 0.001	< 0.002	0.011
OCT 7,82	SEP 14,82	0.004	< 0.001	< 0.003	0.055	0.007	< 0.002	0.060
OCT 12,82	OCT 7,82	< 0.001	< 0.001	0.003	0.008	0.006	< 0.002	0.008
NOV 9,82	OCT 12,82	0.001	< 0.001	0.004	0.016	0.003	< 0.002	0.011

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : DORION/CUMULATIVE PRECIP. #31

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.044	0.0002	0.0224
MAR 2,82	FEB 2,82	*****	******	0.0776
MAR 30,82	MAR 2,82	< 0.002	0.0002	0.0562
APR 27,82	MAR 30,82	0.003	0.0001	0.0209
MAY 25,82	APR 27,82	0.002	0.0001	0.0589
JUN 22,82	MAY 25,82	< 0.002	< 0.0001	0.0191
JUL 20,82	JUN 22,82	0.001	< 0.0001	0.0158
AUG 17,82	JUL 20,82	0.006	0.0002	0.0072
SEP 14,82	AUG 17,82	0.001	< 0.0001	0.0251
OCT 7,82	SEP 14,82	0.001	< 0.0001	0.0407
OCT 12,82	OCT 7,82	0.001	< 0.0001	0.0363
NOV 9,82	OCT 12,82	< 0.002	< 0.0001	0.0182

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP. #35 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	900	900	2	4.5	0	13517	2	1	58	CFI	
MAR 2,82	FEB 2,82	845	915	2	12.0	0	13519	2	1	***	CDG	N
MAR 30,82	MAR 2,82	915	945	1	26.2	0	13521	2	1	80	C	H
APR 7,82	MAR 30,82	900	945	2	27.5	0	13523	2	1	77	D	C
APR 27,82	APR 7,82	945	900	4	12.0	0	13524	2	1	8	D	N
MAY 25,82	APR 27,82	900	900	1	70.0	0	13526	2	1	***	CG	N
JUN 22,82	MAY 25,82	900	900	1	80.0	0	13528	2	1	***	DGQ	N
JUL 20,82	JUN 22,82	900	900	1	70.0	0	13530	2	1	65	ACD	H
AUG 17,82	JUL 20,82	900	900	1	75.0	0	13532	2	1	***	ACG	N
SEP 14,82	AUG 17,82	900	930	1	60.0	0	13534	2	1	77	ACD	H
OCT 15,82	SEP 14,82	930	1030	1	130.0	0	13536	2	1	***	ADG	H
OCT 27,82	OCT 15,82	1030	1015	1	9.8	9	13538	2	1	28	RC	N
NOV 9,82	OCT 27,82	1015	945	2	9.0	9	13539	2	1	46	C	N
DEC 7,82	NOV 9,82	945	945	3	27.2	0	13541	2	1	***	CGH	H
JAN 4,83	DEC 7,82	1000	900	1	8.1	0	13543	2	1	20	CQ	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP. #35

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		85.0	*****		4.28		******	1.50	0.48	*****
MAR 2,82	FEB 2,82	U	179.0	*****		4.41		******	1.70	0.37	0.10
MAR 30,82	MAR 2,82		681.0	13.5		4.86		0.0452	1.35	0.32	0.22
APR 7,82	MAR 30,82		694.0	8.6		5.42		0.0320	0.90	0.15	0.23
APR 27,82	APR 7,82	U	33.0	*****		*****		0.0328	3.30	0.70	*****
MAY 25,82	APR 27,82	U	96.0	*****	U	5.74	U	0.0292	1.55	0.26	*****
JUN 22,82	MAY 25,82	U	740.0	8.0		5.42		0.0244	1.10	0.16	0.18
JUL 20,82	JUN 22,82		1486.0	6.2		5.93		0.0236	0.65	0.16	0.15
AUG 17,82	JUL 20,82	U	93.0	23.0	U	6.75		0.0374	0.75	0.15	*****
SEP 14,82	AUG 17,82		1504.0	6.1		5.17		0.0310	0.85	0.13	0.12
OCT 15,82	SEP 14,82		2660.0	8.1		5.27		0.0444	1.40	0.17	0.30
OCT 27,82	OCT 15,82	U	91.0	*****		4.43		0.0582	2.80	0.42	*****
NOV 9,82	OCT 27,82	U	136.0	*****		4.37		0.0710	3.75	0.50	*****
DEC 7,82	NOV 9,82		613.0	5.5		5.50		0.0230	0.60	0.10	0.17
JAN 4,83	DEC 7,82	U	55.0	*****		4.75		0.0448	1.70	0.56	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP. #35 PAGE : 3

REMOVAL DATE	EXPOSURE DATE		CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82		0.23	*****	*****	*****	*****	0.120	*****
MAR 2,82	FEB 2,82		0.14	*****	0.030	0.015	0.105	0.362	*****
MAR 30,82	MAR 2,82		0.14	0.75	0.055	0.030	0.090	0.450	0.014
APR 7,82	MAR 30,82		0.08	0.38	0.020	0.025	0.045	0.198	0.013
APR 27,82	APR 7,82		0.16	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82		0.06	*****	*****	*****	*****	*****	*****
JUN 22,82	MAY 25,82	<W	0.01	0.62	0.045	0.210	0.030	0.228	0.056
JUL 20,82	JUN 22,82		0.06	0.56	0.040	0.105	0.025	0.362	0.035
AUG 17,82	JUL 20,82		0.08	*****	*****	*****	*****	U 1.030	*****
SEP 14,82	AUG 17,82		0.06	0.37	0.010	0.035	0.015	0.272	0.010
OCT 15,82	SEP 14,82		0.08	0.48	0.035	0.095	0.090	0.326	0.015
OCT 27,82	OCT 15,82		0.16	0.80	*****	*****	*****	0.360	0.011
NOV 9,82	OCT 27,82		0.12	1.11	0.095	0.125	0.060	0.520	0.048
DEC 7,82	NOV 9,82		0.24	0.28	0.015	0.120	0.170	0.128	0.026
JAN 4,83	DEC 7,82		0.20	0.86	*****	*****	*****	*****	0.051

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP. #35 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.003	0.001	0.009	0.033	0.002	< 0.002	0.031
APR 7,82	MAR 30,82	0.003	< 0.001	0.005	0.050	0.008	< 0.002	0.038
APR 27,82	APR 7,82	*****	*****	*****	*****	*****	*****	*****
MAY 25,82	APR 27,82	*****	*****	*****	*****	*****	*****	*****
JUN 22,82	MAY 25,82	0.022	< 0.001	0.018	0.034	0.001	< 0.002	0.018
JUL 20,82	JUN 22,82	0.002	< 0.001	0.004	0.043	< 0.001	< 0.002	0.035
AUG 17,82	JUL 20,82	*****	*****	*****	*****	*****	*****	*****
SEP 14,82	AUG 17,82	0.003	< 0.001	< 0.003	0.032	0.004	< 0.002	0.017
OCT 15,82	SEP 14,82	0.003	0.002	0.003	0.047	0.005	< 0.002	0.070
OCT 27,82	OCT 15,82	*****	*****	*****	*****	*****	*****	*****
NOV 9,82	OCT 27,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	0.003	< 0.001	0.007	U 0.248	0.003	< 0.002	U 0.118
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EAR FALL'S/CUMULATIVE PRECIP. #35

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM UG/L	FREE H+ UG/L
FEB 2,82	JAN 5,82	*****	******	0.0525
MAR 2,82	FEB 2,82	*****	******	0.0389
MAR 30,82	MAR 2,82	0.004	0.0003	0.0138
APR 7,82	MAR 30,82	0.003	0.0003	0.0038
APR 27,82	APR 7,82	*****	******	******
MAY 25,82	APR 27,82	*****	******	U 0.0018
JUN 22,82	MAY 25,82	< 0.002	0.0001	0.0038
JUL 20,82	JUN 22,82	< 0.002	< 0.0001	0.0012
AUG 17,82	JUL 20,82	*****	******	U 0.0002
SEP 14,82	AUG 17,82	0.002	< 0.0001	0.0068
OCT 15,82	SEP 14,82	0.003	< 0.0001	0.0054
OCT 27,82	OCT 15,82	*****	******	0.0372
NOV 9,82	OCT 27,82	*****	******	0.0427
DEC 7,82	NOV 9,82	0.008	< 0.0001	0.0032
JAN 4,83	DEC 7,82	*****	******	0.0178

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 1,82	JAN 5,82	830	800	2	10.4	0	13132	2	1	***	CDGF	
MAR 1,82	FEB 14,82	800	830	3	15.4	0	13134	2	1	***	CG	N
MAR 29,82	MAR 1,82	830	800	3	23.4	0	13136	2	1	***	CG	
APR 27,82	MAR 29,82	800	2000	1	34.6	0	13138	2	1	***	CDG	
MAY 24,82	APR 27,82	2000	1600	1	45.8	0	13140	2	1	84	CD	
JUN 22,82	MAY 24,82	1700	900	1	60.0	0	13142	2	1	61	CD	H
JUL 21,82	JUN 22,82	900	800	1	128.0	0	13144	2	1	***	CDG	
AUG 17,82	JUL 21,82	800	1020	1	53.0	0	13146	2	1	***	ACDG	H
SEP 14,82	AUG 17,82	1020	1500	1	50.5	0	13148	2	1	80	CDQ	H
OCT 13,82	SEP 14,82	1500	815	1	147.2	0	13150	2	1	83	D	H
OCT 26,82	OCT 13,82	815	1700	1	4.6	0	13152	2	1	53		
NOV 9,82	OCT 26,82	1700	930	3	18.6	0	13153	2	1	1	CQ	N
DEC 7,82	NOV 9,82	930	815	4	16.1	0	13155	2	1	121	C	N
JAN 4,83	DEC 7,82	815	800	2	27.4	0	13157	2	1	***	CGH	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 1,82	JAN 5,82		******	*****	*****	******	*****	*****	*****
MAR 1,82	FEB 1,82	U	140.0	*****	4.27	******	3.75	0.69	0.18
MAR 29,82	MAR 1,82		428.0	20.0	4.64	0.0614	2.45	0.36	0.36
APR 27,82	MAR 29,82		810.0	19.2	4.86	0.0426	2.90	0.43	0.40
MAY 24,82	APR 27,82		1259.0	20.8	4.62	0.0420	3.05	0.50	0.55
JUN 22,82	MAY 24,82		1191.0	10.3	5.09	0.0342	1.55	0.22	0.28
JUL 21,82	JUN 22,82		2516.0	11.9	4.77	0.0324	1.30	0.25	0.22
AUG 17,82	JUL 21,82		1098.0	7.3	5.28	0.0282	0.75	0.30	0.23
SEP 14,82	AUG 17,82		1323.0	7.1	5.01	0.0330	0.95	0.18	0.19
OCT 13,82	SEP 14,82		4000.0	8.2	4.99	0.0392	1.15	0.14	0.24
OCT 26,82	OCT 13,82		80.0	*****	4.70	0.0474	2.20	0.50	0.65
NOV 9,82	OCT 26,82	U	8.0	*****	*****	******	*****	*****	*****
DEC 7,82	NOV 9,82		637.0	15.8	4.59	0.0484	1.60	0.26	0.20
JAN 4,83	DEC 7,82	U	188.0	*****	4.86	0.0502	*****	*****	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 1,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 1,82	FEB 1,82	0.27	*****	0.040	0.095	0.225	1.030	*****
MAR 29,82	MAR 1,82	0.08	0.64	0.050	0.045	0.065	0.420	0.012
APR 27,82	MAR 29,82	0.10	1.05	0.035	0.040	0.035	0.800	0.009
MAY 24,82	APR 27,82	0.09	0.83	0.100	0.060	0.035	0.700	0.017
JUN 22,82	MAY 24,82	0.04	0.72	0.050	0.090	0.030	0.400	0.047
JUL 21,82	JUN 22,82	0.05	0.40	0.040	0.050	0.025	0.236	0.010
AUG 17,82	JUL 21,82	0.06	0.57	< 0.005	0.080	0.030	0.380	0.012
SEP 14,82	AUG 17,82	0.07	0.34	0.040	0.020	0.015	0.290	< 0.003
OCT 13,82	SEP 14,82	0.05	0.34	0.025	0.050	0.055	0.248	0.004
OCT 26,82	OCT 13,82	0.30	*****	0.080	0.060	0.070	*****	*****
NOV 9,82	OCT 26,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	0.09	0.46	0.020	0.020	0.045	0.288	0.017
JAN 4,83	DEC 7,82	*****	*****	*****	*****	*****	0.590	*****

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 1,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 1,82	FEB 1,82	*****	*****	*****	*****	*****	*****	*****
MAR 29,82	MAR 1,82	0.010	< 0.001	0.027	0.055	0.002	< 0.002	0.062
APR 27,82	MAR 29,82	0.005	0.001	0.008	0.010	0.004	0.002	0.011
MAY 24,82	APR 27,82	0.010	< 0.001	0.005	0.088	0.002	< 0.002	0.088
JUN 22,82	MAY 24,82	0.007	< 0.001	< 0.004	0.092	0.001	< 0.002	0.069
JUL 21,82	JUN 22,82	0.003	< 0.001	< 0.003	0.015	< 0.001	< 0.002	0.016
AUG 17,82	JUL 21,82	0.005	< 0.001	0.005	0.024	0.002	< 0.002	0.025
SEP 14,82	AUG 17,82	0.004	< 0.001	< 0.004	0.025	0.004	< 0.002	0.018
OCT 13,82	SEP 14,82	0.004	< 0.001	0.003	0.074	0.005	< 0.002	0.088
OCT 26,82	OCT 13,82	*****	*****	*****	*****	*****	*****	*****
NOV 9,82	OCT 26,82	*****	*****	*****	*****	*****	*****	*****
DEC 7,82	NOV 9,82	0.003	< 0.001	0.006	0.035	0.001	< 0.002	0.022
JAN 4,83	DEC 7,82	0.010	0.003	0.019	0.197	0.002	< 0.002	0.093

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : EXP. LAKES AREA/CUMULATIVE PRECIP. #34

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H^+ MG/L
FEB 1,82	JAN 5,82	*****	******	******
MAR 1,82	FEB 1,82	*****	******	0.0537
MAR 29,82	MAR 1,82	0.005	0.0007	0.0229
APR 27,82	MAR 29,82	0.003	0.0002	0.0138
MAY 24,82	APR 27,82	< 0.002	< 0.0001	0.0240
JUN 22,82	MAY 24,82	0.002	< 0.0001	0.0081
JUL 21,82	JUN 22,82	< 0.001	< 0.0001	0.0170
AUG 17,82	JUL 21,82	< 0.002	< 0.0001	0.0052
SEP 14,82	AUG 17,82	0.002	< 0.0001	0.0098
OCT 13,82	SEP 14,82	0.001	< 0.0001	0.0102
OCT 26,82	OCT 13,82	*****	******	0.0200
NOV 9,82	OCT 26,82	*****	******	******
DEC 7,82	NOV 9,82	< 0.003	0.0001	0.0257
JAN 4,83	DEC 7,82	< 0.006	0.0005	0.0138

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
JAN 21,82	DEC 1,81	800	1330	2	58.9	9	95001	2	1	***	CF	
MAR 2,82	FEB 16,82	1215	800	2	11.4	9	95005	2	1	***	CDG	N
MAR 30,82	MAR 2,82	800	800	3	39.8	9	95007	2	1	***	DG	N
APR 23,82	MAR 30,82	830	1030	3	44.8	9	95009	2	1	36	CD	N
MAY 4,82	APR 23,82	1110	830	1	6.8	9	95010	2	1	31	C	N
MAY 26,82	MAY 4,82	830	1350	1	58.0	9	95012	2	1	***	CG	N
JUN 23,82	MAY 26,82	1350	1100	1	54.4	9	95014	2	1	***	GQ	
JUL 20,82	JUN 23,82	1100	900	1	151.6	9	95016	2	1	36	D	NH
AUG 17,82	JUL 20,82	900	900	1	28.2	9	95018	2	1	38	BC	NHCM
SEP 14,82	AUG 17,82	1000	1000	1	94.2	9	95020	2	1	93	AD	
OCT 12,82	SEP 14,82	1000	1200	3	143.2	9	95022	2	1	***	EG	
NOV 10,82	OCT 12,82	1200	1500	3	75.2	9	95024	2	1	47	AD	N
DEC 7,82	NOV 10,82	1500	900	3	34.8	9	95026	2	1	35		N
JAN 4,83	DEC 7,82	900	900	2	28.2	9	95028	2	1	***	CGH	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33 PAGE : 2

REMOVAL DATE	EXPOSURE DATE		VOLUME ML		CONDUCT. UMHO/CM		PH LAB		TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
JAN 21,82	DEC 1,81		******		*****		4.62		******	*****	*****	*****
MAR 2,82	FEB 16,82	U	80.0		12.6		4.68		******	1.10	0.32	*****
MAR 30,82	MAR 2,82	U	440.0		12.4		4.82		0.0424	1.25	0.24	0.18
APR 23,82	MAR 30,82	U	525.0		14.0		5.01		0.0360	2.00	0.30	0.30
MAY 4,82	APR 20,82	U	69.0		23.2	U	6.38		0.0656	4.05	0.72	*****
MAY 26,82	MAY 4,82	U	186.0		19.6		4.34		0.0474	2.50	0.34	0.22
JUN 23,82	MAY 26,82		******		*****		*****		******	*****	*****	*****
JUL 20,82	JUN 23,82	U	1775.0		6.9		5.68		0.0210	0.85	0.21	0.33
AUG 17,82	JUL 20,82	U	356.0	U	12.0	U	6.22		0.0322	0.80	0.18	0.21
SEP 14,82	AUG 17,82		2852.0		6.9		5.09		0.0340	0.95	0.15	0.11
OCT 12,82	SEP 14,82		******		*****		*****		******	*****	*****	*****
NOV 10,82	OCT 12,82	U	1154.0		12.1		4.66		0.0410	1.30	0.21	0.20
DEC 7,82	NOV 10,82	U	401.0		13.3		4.69		0.0434	1.25	0.25	0.18
JAN 4,83	DEC 7,82		476.0		21.0		4.39		0.0680	1.75	0.48	0.13

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
JAN 21,82	DEC 1,81	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 16,82	0.14	*****	*****	*****	*****	0.332	*****
MAR 30,82	MAR 2,82	0.05	0.59	0.020	0.035	0.100	0.262	0.012
APR 23,82	MAR 30,82	0.10	1.00	0.040	0.040	0.035	0.530	0.033
MAY 4,82	APR 23,82	0.12	*****	*****	*****	*****	*****	*****
MAY 26,82	MAY 4,82	0.07	0.74	0.045	0.070	0.055	0.490	0.029
JUN 23,82	MAY 26,82	*****	*****	*****	*****	*****	*****	*****
JUL 20,82	JUN 23,82	0.06	0.41	0.055	0.060	0.035	0.282	0.020
AUG 17,82	JUL 20,82	U 0.17	U 2.30	0.055	U 0.135	0.040	0.590	U 0.129
SEP 14,82	AUG 17,82	0.08	0.40	0.020	0.025	0.020	0.300	0.004
OCT 12,82	SEP 14,82	*****	*****	*****	*****	*****	*****	*****
NOV 10,82	OCT 12,82	0.07	0.62	0.025	0.105	0.055	0.190	0.014
DEC 7,82	NOV 10,82	0.17	0.31	0.025	0.080	0.090	0.202	0.013
JAN 4,83	DEC 7,82	0.09	0.43	0.025	0.040	0.045	0.342	0.007

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
JAN 21,82	DEC 1,81	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 16,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.004	< 0.001	0.020	0.045	0.003	< 0.002	0.032
APR 23,82	MAR 30,82	0.008	0.001	0.006	0.132	0.006	0.002	0.080
MAY 4,82	APR 23,82	*****	*****	*****	*****	*****	*****	*****
MAY 26,82	MAY 4,82	*****	*****	*****	*****	*****	*****	*****
JUN 23,82	MAY 26,82	*****	*****	*****	*****	*****	*****	*****
JUL 20,82	JUN 23,82	0.006	< 0.001	0.006	0.079	< 0.001	< 0.002	0.059
AUG 17,82	JUL 20,82	0.004	< 0.001	0.007	0.146	0.004	< 0.002	0.096
SEP 14,82	AUG 17,82	0.002	< 0.001	< 0.003	0.017	< 0.001	< 0.002	0.015
OCT 12,82	SEP 14,82	*****	*****	*****	*****	*****	*****	*****
NOV 10,82	OCT 12,82	0.002	< 0.001	0.005	0.027	0.007	< 0.002	0.012
DEC 7,82	NOV 10,82	0.006	< 0.001	0.012	0.046	0.002	< 0.002	0.014
JAN 4,83	DEC 7,82	0.006	0.002	0.006	0.058	0.004	< 0.002	0.030

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : LAC LA CROIX/CUMULATIVE PRECIP. #33

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
JAN 21,82	DEC 1,81	*****	******	0.0240
MAR 2,82	FEB 16,82	*****	******	0.0209
MAR 30,82	MAR 2,82	0.005	0.0003	0.0151
APR 23,82	MAR 30,82	0.003	0.0001	0.0098
MAY 4,82	APR 23,82	*****	******	U 0.0004
MAY 26,82	MAY 4,82	*****	******	0.0457
JUN 23,82	MAY 26,82	*****	******	******
JUL 20,82	JUN 23,82	0.002	< 0.0001	0.0021
AUG 17,82	JUL 20,82	< 0.004	0.0001	U 0.0006
SEP 14,82	AUG 17,82	< 0.001	< 0.0001	0.0081
OCT 12,82	SEP 14,82	*****	******	******
NOV 10,82	OCT 12,82	< 0.002	0.0003	0.0219
DEC 7,82	NOV 10,82	< 0.003	0.0002	0.0204
JAN 4,83	DEC 7,82	< 0.003	< 0.0001	0.0407

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 5,82	JAN 5,82	840	1340	2	9.8	0	13267	2	1	***	CDG	
MAR 2,82	FEB 5,82	1400	855	3	22.2	0	13269	2	1	32	CD	N
MAR 30,82	MAR 2,82	855	855	3	25.5	0	13271	2	1	71	C	
APR 27,82	MAR 30,82	855	830	3	46.7	0	13273	2	1	50	CD	
MAY 25,82	APR 27,82	915	820	1	55.0	0	13275	2	1	82	CD	
JUN 22,82	MAY 25,82	830	835	1	107.5	0	13277	2	1	78	D	HCM
JUL 20,82	JUN 22,82	835	820	1	95.0	0	13279	2	1	75	AD	H
AUG 17,82	JUL 20,82	820	830	1	40.0	0	13281	2	1	92	D	HM
SEP 14,82	AUG 17,82	830	845	1	70.0	0	13283	2	1	87	AD	H
OCT 12,82	SEP 14,82	845	835	*	90.0	0	13285	2	1	87	AD	H
NOV 9,82	OCT 12,82	835	925	3	35.0	0	13287	2	1	***	CFGJ	
DEC 7,82	NOV 9,82	930	915	4	19.2	0	13289	2	1	***	CDGH	H
JAN 4,83	DEC 7,82	925	930	4	19.2	0	13291	2	1	***	CGH	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 5,82	JAN 5,82	302.0	12.4	U 5.93	U 0.0296	1.20	0.24	*****
MAR 2,82	FEB 5,82	U 235.0	*****	4.52	******	1.35	0.24	0.16
MAR 30,82	MAR 2,82	588.0	17.5	4.58	0.0606	1.55	0.30	0.22
APR 27,82	MAR 30,82	771.0	12.4	U 6.51	0.0230	1.95	0.29	U 0.94
MAY 25,82	APR 27,82	1472.0	19.2	U 6.78	0.0214	3.70	0.39	U 1.19
JUN 22,82	MAY 25,82	2726.0	7.1	4.63	0.0314	0.80	0.07	0.09
JUL 20,82	JUN 22,82	2337.0	5.9	6.09	0.0222	0.65	0.15	0.33
AUG 17,82	JUL 20,82	1205.0	7.7	5.00	0.0300	0.80	0.20	0.29
SEP 14,82	AUG 17,82	1978.0	5.9	5.33	0.0340	1.00	0.11	0.30
OCT 12,82	SEP 14,82	2551.0	10.3	4.96	0.0472	1.95	0.18	0.21
NOV 9,82	OCT 12,82	898.0	U 8.7	U 6.30	U 0.0220	1.40	0.19	U 0.76
DEC 7,82	NOV 9,82	722.0	8.2	5.05	U 0.0284	1.00	0.24	0.37
JAN 4,83	DEC 7,82	U 306.0	*****	4.83	0.0368	1.65	0.42	U 0.59

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 5,82	JAN 5,82	U 1.30	*****	*****	*****	*****	0.004	*****
MAR 2,82	FEB 5,82	0.22	*****	0.040	0.080	0.170	0.234	*****
MAR 30,82	MAR 2,82	0.08	0.55	0.035	0.020	0.040	0.262	0.007
APR 27,82	MAR 30,82	0.13	*****	J 0.185	0.015	0.060	*****	*****
MAY 25,82	APR 27,82	0.14	1.38	0.110	0.115	0.100	U 0.950	U 0.105
JUN 22,82	MAY 25,82	0.01	0.15	0.025	0.025	0.015	0.078	0.005
JUL 20,82	JUN 22,82	0.06	0.42	0.060	0.060	0.030	0.260	0.021
AUG 17,82	JUL 20,82	0.04	0.42	0.060	0.050	0.025	0.266	0.007
SEP 14,82	AUG 17,82	0.08	0.43	0.050	0.040	0.025	0.240	0.014
OCT 12,82	SEP 14,82	0.09	0.70	0.025	0.080	0.090	0.530	0.032
NOV 9,82	OCT 12,82	0.04	0.31	J 0.185	0.020	0.030	0.166	0.005
DEC 7,82	NOV 9,82	0.13	0.32	0.060	0.030	0.060	0.180	0.016
JAN 4,83	DEC 7,82	0.14	0.41	J 0.125	0.040	0.060	0.228	0.005

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 5,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.003	< 0.001	0.008	0.026	0.004	< 0.002	0.011
APR 27,82	MAR 30,82	0.008	0.001	0.017	0.335	0.010	0.002	0.073
MAY 25,82	APR 27,82	0.007	< 0.001	U 0.019	0.089	0.005	< 0.002	0.069
JUN 22,82	MAY 25,82	< 0.001	< 0.001	0.009	0.007	0.001	< 0.002	< 0.007
JUL 20,82	JUN 22,82	< 0.001	< 0.001	< 0.003	0.018	< 0.001	< 0.002	0.019
AUG 17,82	JUL 20,82	0.004	< 0.001	< 0.004	0.021	0.002	< 0.002	0.024
SEP 14,82	AUG 17,82	0.002	< 0.001	< 0.003	0.022	0.004	< 0.002	0.027
OCT 12,82	SEP 14,82	0.002	< 0.001	0.006	0.047	0.003	< 0.002	0.036
NOV 9,82	OCT 12,82	0.004	< 0.001	0.005	U 0.118	0.002	< 0.002	U 0.079
DEC 7,82	NOV 9,82	0.002	< 0.001	0.008	0.030	0.001	< 0.002	0.022
JAN 4,83	DEC 7,82	0.004	< 0.001	0.009	0.055	0.011	< 0.002	0.032

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : NAKINA/CUMULATIVE PRECIP. #30 PAGE : 5

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 5,82	JAN 5,82	*****	******	U 0.0012
MAR 2,82	FEB 5,82	*****	******	0.0302
MAR 30,82	MAR 2,82	0.002	0.0003	0.0263
APR 27,82	MAR 30,82	0.002	0.0003	U 0.0003
MAY 25,82	APR 27,82	0.001	0.0001	U 0.0002
JUN 22,82	MAY 25,82	< 0.001	< 0.0001	0.0234
JUL 20,82	JUN 22,82	0.001	< 0.0001	0.0008
AUG 17,82	JUL 20,82	0.001	< 0.0001	0.0100
SEP 14,82	AUG 17,82	0.002	< 0.0001	0.0047
OCT 12,82	SEP 14,82	0.001	< 0.0001	0.0110
NOV 9,82	OCT 12,82	< 0.002	0.0002	U 0.0005
DEC 7,82	NOV 9,82	< 0.002	0.0001	0.0089
JAN 4,83	DEC 7,82	< 0.004	0.0001	0.0148

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP. #36 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	950	1100	2	18.7	0	13767	2	1	92	CD	
MAR 2,82	FEB 2,82	1100	1015	2	17.2	0	13769	2	1	***	CG	N
MAR 30,82	MAR 2,82	1015	1019	3	29.6	0	13771	2	1	58	C	H
APR 27,82	MAR 30,82	1019	900	3	50.8	0	13773	2	1	36	CD	N
MAY 27,82	APR 27,82	900	****	1	72.3	0	13775	2	1	***	ACDG	
JUN 29,82	MAY 27,82	740	1140	1	83.0	0	13777	2	1	45	CDF	NH
JUL 20,82	JUN 29,82	1142	1040	1	12.0	0	13779	2	1	85	C	
AUG 18,82	JUL 20,82	1120	1040	1	96.0	0	13781	2	1	***	CDG	HM
SEP 14,82	AUG 18,82	1120	1310	1	71.3	0	13783	2	1	24	ACDI	NHM
OCT 13,82	OCT 4,82	1500	1000	3	35.7	9	13785	2	1	***	ACGF	N
NOV 15,82	OCT 13,82	1000	1130	3	37.5	0	13787	2	1	***	CFGJ	N
DEC 7,82	NOV 15,82	1130	1030	4	29.1	0	13789	2	1	98	CJOF	
JAN 10,83	DEC 7,82	1030	1055	2	38.4	0	13791	2	1	***	CGH	

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP. #36

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82		560.0	11.4		4.68	0.0530	0.40	0.28	0.10
MAR 2,82	FEB 2,82		706.0	8.8		4.66	0.0584	0.55	0.17	0.10
MAR 30,82	MAR 2,82		564.0	11.8		4.86	0.0474	1.10	0.22	0.21
APR 27,82	MAR 30,82	U	602.0	14.2		6.20	0.0276	2.25	0.41	0.45
MAY 27,82	APR 27,82		1786.0	17.9		4.42	0.0470	1.85	0.23	0.15
JUN 29,82	MAY 27,82	U	1214.0	8.9		5.25	0.0310	1.45	0.13	0.27
JUL 20,82	JUN 29,82		334.0	10.2	U	6.43	0.0256	1.00	0.30	0.46
AUG 18,82	JUL 20,82		2627.0	5.1		5.11	0.0238	0.40	0.13	0.10
SEP 14,82	AUG 18,82	U	569.0	5.6		6.00	0.0270	0.65	0.08	0.17
OCT 13,82	OCT 4,82	U	535.0	16.5		4.46	0.0690	2.20	0.20	0.09
NOV 15,82	OCT 13,82	U	219.0	*****		5.60	0.0262	0.55	0.07	0.07
DEC 7,82	NOV 15,82		935.0	11.4		4.72	0.0432	1.15	0.24	0.22
JAN 10,83	DEC 7,82		984.0	11.8		4.80	0.0514	1.00	0.24	0.13

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP. #36 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.13	0.15	0.015	0.040	0.060	0.030	0.013
MAR 2,82	FEB 2,82	0.10	0.21	0.010	0.010	0.055	0.086	0.007
MAR 30,82	MAR 2,82	0.10	0.60	0.055	0.030	0.070	0.264	0.010
APR 27,82	MAR 30,82	0.06	1.20	0.045	0.035	0.035	0.870	0.023
MAY 27,82	APR 27,82	0.02	0.55	0.020	0.035	0.025	0.292	0.005
JUN 29,82	MAY 27,82	< 0.02	0.56	0.050	0.165	< 0.010	0.348	0.043
JUL 20,82	JUN 29,82	0.10	U 1.15	0.080	0.045	0.030	0.610	0.013
AUG 18,82	JUL 20,82	0.14	0.36	0.020	0.045	0.020	0.220	0.007
SEP 14,82	AUG 18,82	0.13	0.66	0.025	0.060	0.050	0.368	0.028
OCT 13,82	OCT 4,82	0.04	0.71	0.010	0.035	0.030	0.450	0.013
NOV 15,82	OCT 13,82	0.13	0.50	0.020	0.020	0.050	0.190	0.010
DEC 7,82	NOV 15,82	0.15	0.49	0.035	0.050	0.075	0.172	0.035
JAN 10,83	DEC 7,82	0.19	0.33	0.030	0.070	0.085	0.114	0.007

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP. #36 PAGE : 4

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	0.004	< 0.001	< 0.006	0.066	< 0.001	< 0.002	0.052
MAR 2,82	FEB 2,82	0.001	< 0.001	0.005	0.019	0.008	< 0.002	0.010
MAR 30,82	MAR 2,82	0.002	0.001	0.037	0.027	0.004	< 0.002	0.023
APR 27,82	MAR 30,82	0.006	0.001	0.009	0.124	0.007	0.002	0.059
MAY 27,82	APR 27,82	0.002	0.001	0.003	0.023	0.003	0.002	0.016
JUN 29,82	MAY 27,82	0.006	< 0.001	0.006	0.060	0.002	< 0.002	0.098
JUL 20,82	JUN 29,82	0.003	< 0.001	< 0.008	0.073	0.010	< 0.002	0.043
AUG 18,82	JUL 20,82	0.002	< 0.001	0.002	0.010	< 0.001	< 0.002	0.022
SEP 14,82	AUG 18,82	0.002	< 0.001	0.006	0.038	0.004	< 0.002	0.031
OCT 13,82	OCT 4,82	< 0.001	< 0.001	0.005	0.010	0.001	< 0.002	0.011
NOV 15,82	OCT 13,82	0.002	< 0.001	0.005	0.079	0.006	< 0.002	0.051
DEC 7,82	NOV 15,82	0.002	< 0.001	0.022	0.049	0.006	< 0.002	0.024
JAN 10,83	DEC 7,82	0.002	0.002	0.012	0.038	< 0.001	< 0.002	0.031

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : PICKLE LAKE/CUMULATIVE PRECIP. #36

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
FEB 2,82	JAN 5,82	0.121	0.0001	0.0209
MAR 2,82	FEB 2,82	0.002	0.0020	0.0219
MAR 30,82	MAR 2,82	0.004	0.0002	0.0138
APR 27,82	MAR 30,82	0.005	0.0001	0.0006
MAY 27,82	APR 27,82	0.002	0.0001	0.0380
JUN 29,82	MAY 27,82	0.001	0.0003	0.0056
JUL 20,82	JUN 29,82	0.004	< 0.0001	U 0.0004
AUG 18,82	JUL 20,82	0.001	< 0.0001	0.0078
SEP 14,82	AUG 18,82	0.004	< 0.0001	0.0010
OCT 13,82	OCT 4,82	< 0.003	< 0.0001	0.0347
NOV 15,82	OCT 13,82	< 0.004	0.0001	0.0025
DEC 7,82	NOV 15,82	0.003	0.0002	0.0191
JAN 10,83	DEC 7,82	0.002	0.0002	0.0158

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
FEB 2,82	JAN 5,82	800	800	2	48.5	9	95203	2	1	***	CDGFJ	N
MAR 2,82	FEB 2,82	800	1000	3	13.2	9	95205	2	1	35	C	N
MAR 30,82	MAR 2,82	1000	1000	3	53.7	9	95207	2	1	55	C	
APR 28,82	MAR 30,82	1000	800	3	65.9	9	95209	2	1	***	DG	
MAY 25,82	APR 28,82	800	800	1	55.3	9	95211	2	1	***	CDG	
JUN 23,82	MAY 25,82	800	800	1	61.2	9	95213	2	1	34	DQ	N
JUL 20,82	JUN 23,82	800	1300	1	193.0	9	95215	2	1	***	CG	H
AUG 17,82	JUL 20,82	1300	800	1	41.5	9	95217	2	1	63	C	H
SEP 20,82	AUG 17,82	800	1300	1	115.6	9	95219	2	1	72	C	
OCT 12,82	SEP 20,82	1300	800	1	117.4	9	95221	2	1	85	AD	
NOV 9,82	OCT 12,82	800	800	3	60.9	9	95223	2	1	65	ACD	
DEC 13,82	NOV 9,82	800	800	3	34.0	9	95225	2	1	***	CGH	
JAN 4,83	DEC 13,82	800	1000	3	38.4	9	95227	2	1	***	CGA	N

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

REMOVAL DATE	EXPOSURE DATE		VOLUME ML	CONDUCT. UMHO/CM	PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L	CALCIUM MG/L
FEB 2,82	JAN 5,82	U	465.0	7.0	4.86	0.0450	0.30	0.13	0.01
MAR 2,82	FEB 2,82	U	153.0	*****	4.35	******	2.10	0.48	0.15
MAR 30,82	MAR 2,82		972.0	12.7	4.76	0.0514	1.10	0.20	0.09
APR 28,82	MAR 30,82		1356.0	13.8	5.35	0.0314	2.05	0.33	0.40
MAY 25,82	APR 28,82		2004.0	17.7	4.54	0.0454	2.25	0.33	0.28
JUN 23,82	MAY 25,82	U	686.0	7.9	5.12	0.0276	0.85	0.12	0.09
JUL 20,82	JUN 23,82		4868.0	8.8	5.07	0.0274	1.10	0.20	0.26
AUG 17,82	JUL 20,82		857.0	7.5	5.58	0.0228	0.80	0.24	0.22
SEP 20,82	AUG 17,82		2712.0	7.8	4.92	0.0312	0.95	0.15	0.01
OCT 12,82	SEP 20,82		3250.0	12.3	4.62	0.0530	1.50	0.21	0.18
NOV 9,82	OCT 12,82		1291.0	10.3	4.75	0.0400	1.20	0.20	0.16
DEC 13,82	NOV 9,82		776.0	7.4	4.89	0.0358	0.60	0.15	0.06
JAN 4,83	DEC 13,82	U	519.0	16.6	4.46	0.0578	1.20	0.36	0.09

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32 PAGE : 3

REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
FEB 2,82	JAN 5,82	0.08	0.33	0.010	0.040	0.030	0.018	0.005
MAR 2,82	FEB 2,82	0.10	*****	0.020	0.025	0.065	0.640	*****
MAR 30,82	MAR 2,82	0.04	0.42	0.005	< 0.010	0.025	0.248	0.011
APR 28,82	MAR 30,82	0.08	0.88	0.040	0.040	0.030	0.550	0.025
MAY 25,82	APR 28,82	0.06	0.58	0.045	0.035	0.015	0.500	0.012
JUN 23,82	MAY 25,82	<W 0.01	0.40	0.025	0.045	0.015	0.228	0.017
JUL 20,82	JUN 23,82	0.05	0.44	0.045	0.040	0.025	0.328	0.012
AUG 17,82	JUL 20,82	0.03	0.59	0.050	0.065	0.015	0.440	0.006
SEP 20,82	AUG 17,82	0.07	0.35	0.025	0.025	0.020	0.242	< 0.003
OCT 12,82	SEP 20,82	0.05	0.38	0.015	0.050	0.050	0.318	0.004
NOV 9,82	OCT 12,82	0.02	0.47	0.020	0.025	< 0.005	0.242	*****
DEC 13,82	NOV 9,82	0.08	0.29	<W 0.005	<W 0.005	0.025	0.124	0.020
JAN 4,83	DEC 13,82	0.06	0.32	0.015	0.020	0.030	0.202	<W 0.001

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
FEB 2,82	JAN 5,82	*****	*****	*****	*****	*****	*****	*****
MAR 2,82	FEB 2,82	*****	*****	*****	*****	*****	*****	*****
MAR 30,82	MAR 2,82	0.001	0.001	0.004	0.009	0.002	< 0.002	0.012
APR 28,82	MAR 30,82	0.004	0.001	0.003	0.007	0.004	0.002	0.028
MAY 25,82	APR 28,82	0.004	< 0.001	0.002	0.043	0.004	< 0.002	0.031
JUN 23,82	MAY 25,82	0.003	< 0.001	< 0.005	0.038	0.005	< 0.002	0.016
JUL 20,82	JUN 23,82	0.005	< 0.001	0.003	0.032	0.002	< 0.002	0.025
AUG 17,82	JUL 20,82	0.003	< 0.001	< 0.004	0.040	0.002	< 0.002	0.032
SEP 20,82	AUG 17,82	0.002	< 0.001	< 0.003	0.016	< 0.001	< 0.002	0.012
OCT 12,82	SEP 20,82	0.001	< 0.001	< 0.003	0.027	0.009	< 0.002	0.032
NOV 9,82	OCT 12,82	0.002	< 0.001	0.003	0.010	0.002	< 0.002	0.008
DEC 13,82	NOV 9,82	0.001	< 0.001	0.013	U 0.174	0.002	< 0.002	0.013
JAN 4,83	DEC 13,82	0.002	< 0.001	0.005	0.027	0.002	< 0.002	0.018

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : QUETICO CENTRE/CUMULATIVE PRECIP. #32

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ UG/L
FEB 2,82	JAN 5,82	*****	******	0.0138
MAR 2,82	FEB 2,82	*****	******	0.0447
MAR 30,82	MAR 2,82	0.003	0.0001	0.0174
APR 28,82	MAR 30,82	0.003	0.0001	0.0045
MAY 25,82	APR 28,82	< 0.001	0.0002	0.0288
JUN 23,82	MAY 25,82	< 0.002	< 0.0001	0.0076
JUL 20,82	JUN 23,82	0.001	< 0.0001	0.0085
AUG 17,82	JUL 20,82	< 0.002	0.0001	0.0026
SEP 20,82	AUG 17,82	0.001	< 0.0001	0.0120
OCT 12,82	SEP 20,82	0.001	< 0.0001	0.0240
NOV 9,82	OCT 12,82	< 0.002	0.0001	0.0178
DEC 13,82	NOV 9,82	0.002	< 0.0001	0.0129
JAN 4,83	DEC 13,82	< 0.003	< 0.0001	0.0347

ONTARIO MINISTRY OF THE ENVIRONMENT
CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP. #29 PAGE : 1

REMOVAL DATE	EXPOSURE DATE	SAMPLING START HR.	SAMPLING END HR.	SAMPLE TYPE 01-RAIN 02-SNOW 03-COMP/04-ICE	GAUGE DEPTH(MM)	GAUGE TYPE 00-APIOS 09-AES	SAMPLE NUMBER	PROJECT CODE 02-APIOS 03-SPECIAL	SUBPROJECT CODE 01-MOE 03-AES 04-ON HYDRO	SAMPLER EFFICIENCY (%)	COMMENTS FIELD	COMMENTS OFFICE
AUG 17,82	JUL 20,82	1045	1130	1	38.0	0	11357	2	1	70	A	
SEP 14,82	AUG 17,82	1130	1015	1	89.7	9	11404	2	1	56		HM
OCT 14,82	SEP 14,82	1015	1530	1	17.2	9	11426	2	1	115	FIM	CM
NOV 9,82	OCT 14,82	1500	1400	4	20.5	9	11451	2	1	132		NH
DEC 7,82	NOV 9,82	1400	900	2	58.4	9	11463	2	1	71		

ONTARIO MINISTRY OF THE ENVIRONMENT
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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP. #29 PAGE : 2

REMOVAL DATE	EXPOSURE DATE	VOLUME ML	CONDUCT. UMHO/CM		PH LAB	TOTAL H+ TO PH8.3 MG/L	SULPHATE MG/L	NITRATE AS N MG/L		CALCIUM MG/L
AUG 17,82	JUL 20,82	872.0	6.3		5.44	0.0344	0.70	0.10		0.24
SEP 14,82	AUG 17,82	1656.0	6.9		5.24	0.0238	0.55	0.05		0.15
OCT 14,82	SEP 14,82	644.0	28.0	U	7.15	0.0236	0.75	0.03	U	3.20
NOV 9,82	OCT 14,82	882.0	45.5		5.49	0.0326	2.35	0.12		0.68
DEC 7,82	NOV 9,82	1362.0	10.7		5.61	0.0222	1.35	0.20		0.55

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REMOVAL DATE	EXPOSURE DATE	CHLORIDE MG/L	KJELDAHL AS N MG/L	MAGNESIM MG/L	POTASSIM MG/L	SODIUM MG/L	AMMONIUM AS N MG/L	PHOSPHOR MG/L
AUG 17,82	JUL 20,82	0.39	0.26	0.065	0.045	0.200	0.096	0.013
SEP 14,82	AUG 17,82	0.76	0.14	0.075	0.040	0.530	0.178	0.003
OCT 14,82	SEP 14,82	U 2.30	0.25	U 0.550	0.105	U 1.420	0.054	0.021
NOV 9,82	OCT 14,82	U 10.00	0.16	U 0.500	0.265	U 6.100	0.070	< 0.003
DEC 7,82	NOV 9,82	0.98	0.12	0.150	< 0.005	0.630	0.082	< 0.003

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APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

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REMOVAL DATE	EXPOSURE DATE	MANGANSE MG/L	NICKEL MG/L	ZINC MG/L	IRON MG/L	LEAD MG/L	VANADIUM MG/L	ALUMINUM MG/L
AUG 17,82	JUL 20,82	0.002	< 0.001	0.006	0.036	0.004	< 0.002	0.016
SEP 14,82	AUG 17,82	< 0.001	< 0.001	0.002	0.008	< 0.001	< 0.002	0.007
OCT 14,82	SEP 14,82	0.003	< 0.001	0.006	0.148	0.004	< 0.002	0.072
NOV 9,82	OCT 14,82	0.002	< 0.001	0.007	0.070	< 0.001	< 0.002	0.040
DEC 7,82	NOV 9,82	0.001	< 0.001	0.014	0.016	< 0.001	< 0.002	< 0.009

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CUMULATIVE SAMPLING ANALYSIS RESULTS
APIOS - ACIDIC PRECIPITATION IN ONTARIO STUDY

STATION NAME : WINISK/CUMULATIVE PRECIP. #29

REMOVAL DATE	EXPOSURE DATE	COPPER MG/L	CADMIUM MG/L	FREE H+ MG/L
AUG 17,82	JUL 20,82	< 0.002	0.0001	0.0036
SEP 14,82	AUG 17,82	< 0.002	< 0.0001	0.0058
OCT 14,82	SEP 14,82	0.003	0.0002	U 0.0001
NOV 9,82	OCT 14,82	0.003	0.0004	0.0032
DEC 7,82	NOV 9,82	0.001	0.0001	0.0025